



*New Products*

**New product**

# Electric actuator ETV Series

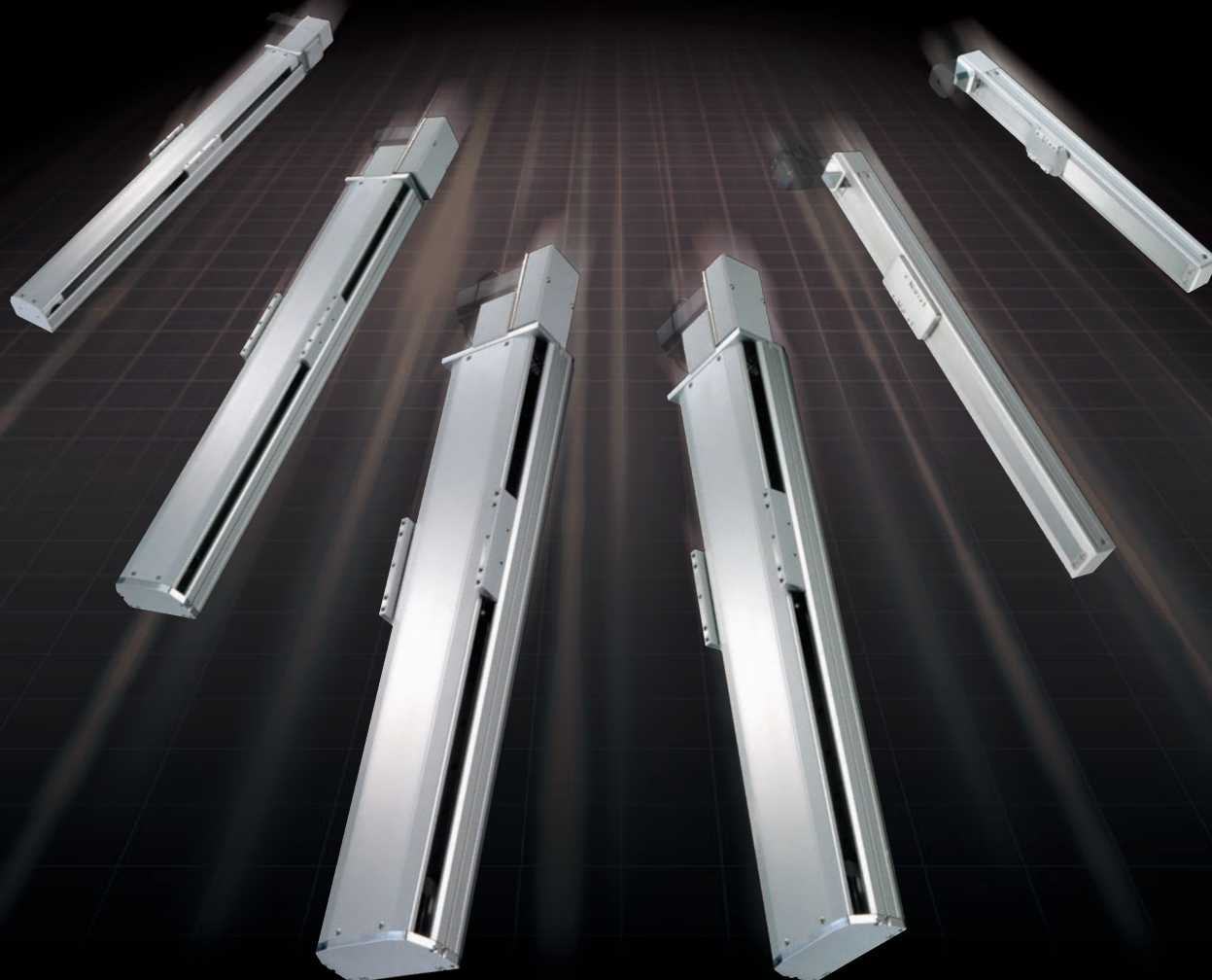


**ELECTRIC ACTUATOR ETV SERIES**

## Motorless type

Now in long stroke and high speed

## Belt Driven



**CKD Corporation**

CC-1216A 

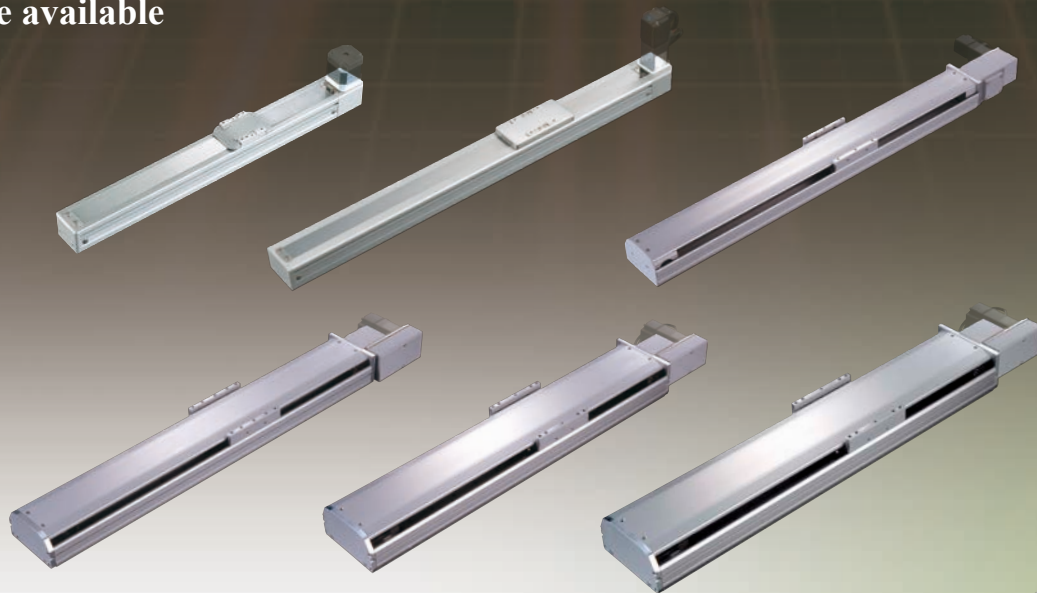
**Belt  
Driven**

# ETV Series

Wide variations to suit different applications

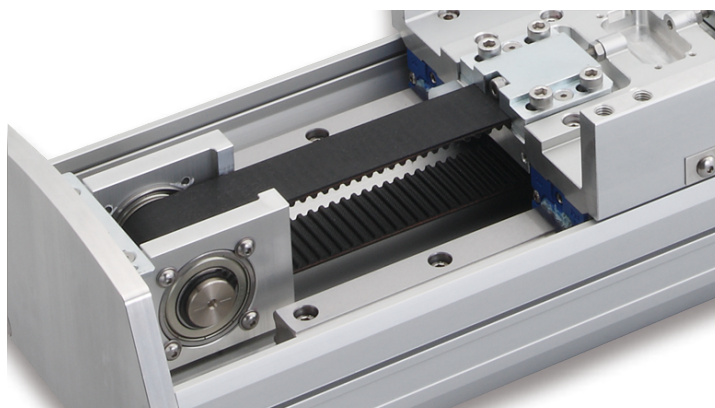
Max. load capacity: up to 85kg Max. stroke length: up to 3500mm Max. speed: up to 2000mm/s

6 sizes are available



**Belt driven**

Long stroke and high speed options are now available with belt driven type.



Provide 2 types of belt for your situation.



Low dust generation  
(Urethane)



Standard  
(Rubber)

## Wide selection of popular motor brand

Motor manufacturers, field network-ready list

	General-purpose	SSCNET	CC-Link	MECHATORO LINK-II	MECHATORO LINK-III	Device Net	Ether CAT
MITSUBISHI	○	○	○	—	—	—	—
DELTA ELECTRONICS	○	—	—	—	—	—	—
SANYO DENKI	○	—	—	—	—	—	○
YASKAWA	○	—	—	○	○	○	—
KEYENCE JAPAN	○	—	—	○	—	—	—
PANASONIC	○	—	—	—	—	—	—
OMRON	○	—	—	○	—	—	○

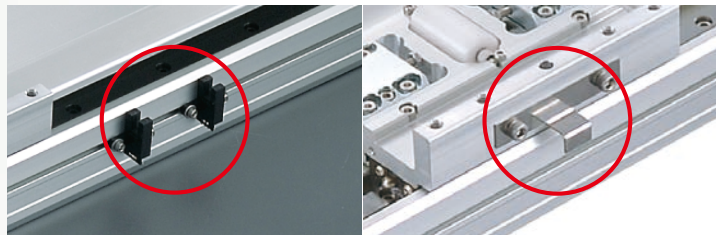
○ Available  
— Not available

The motor is not installed on this product.  
Please obtain, install and adjust the motor and driver by yourself.

\*Refer to table 3 on page 4 for the details.

## Variety of sensor installation method!

Choices of different Installation direction for home position sensor, limit sensor and sensor dog. \* Option



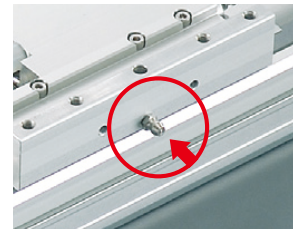
Outside sensor

Outside sensor dog

## Easy Maintenance!

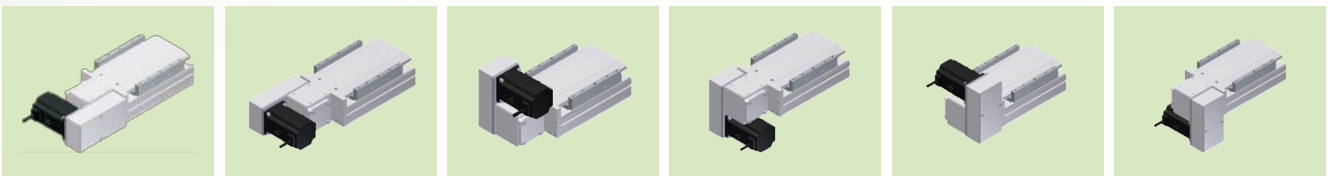
Direct oil supply from grease port.  
Long life with easy maintenance.

\* Option



## Flexible motor installation direction

Several brackets available. Manufacturer and installation direction selectable. \* Option



Right installation

Left installation

Upper left installation

Lower left installation







Upper right installation

Lower right installation

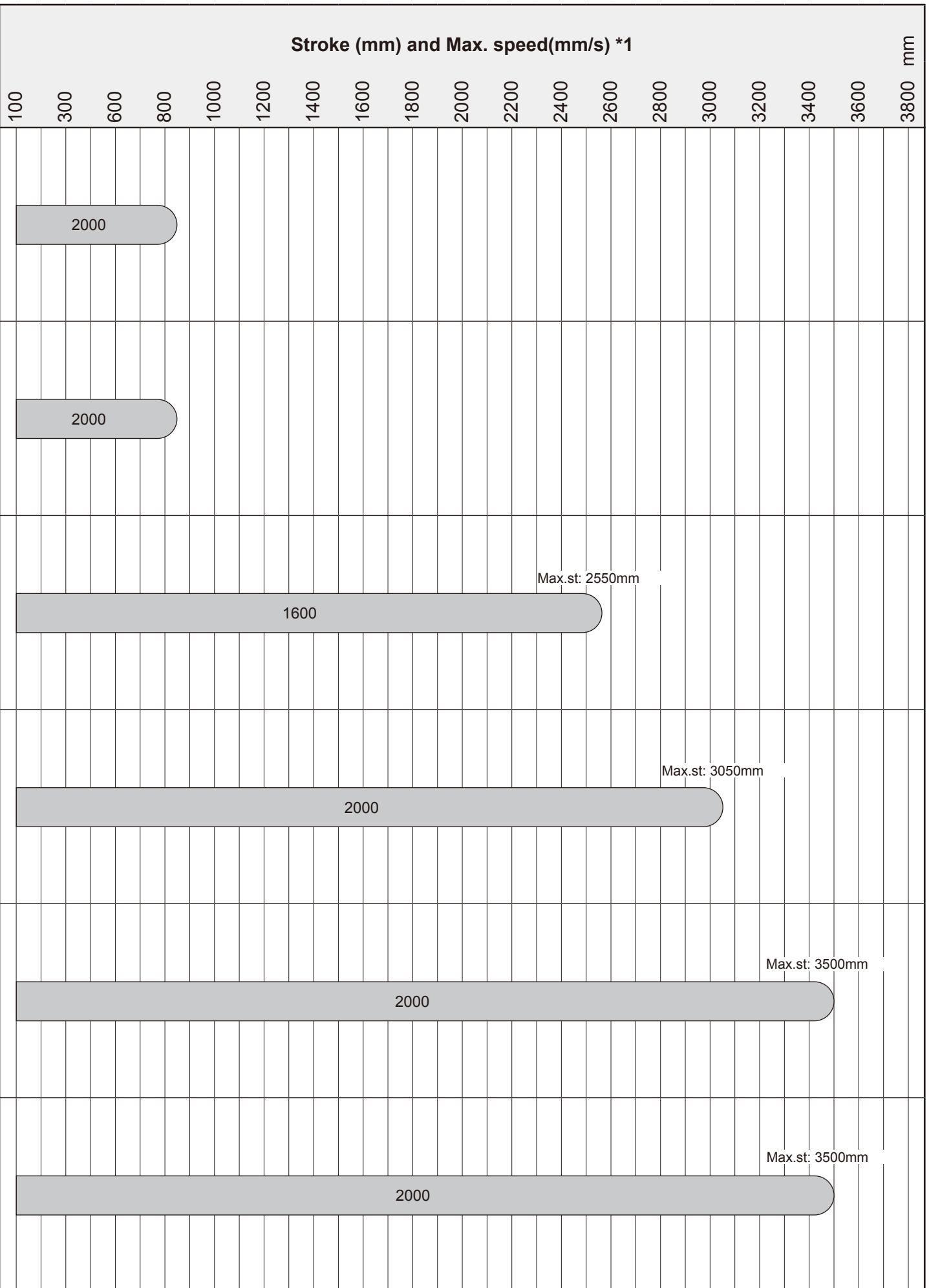
The motor is not installed with this product. Please obtain, install and adjust the motor and driver by yourself.



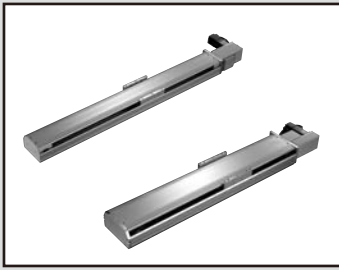
# Selection guide

Type	Model no.	Applicable motor size (W)	Body width (mm)	Belt specification		Repeatability (mm)	Max. load capacity (Kg)		
				Belt width (mm)	Lead (mm)		Horizontal	Vertical	
Belt type ↑ Body size Small ↓ Body size Large	ETV-05		100	50	9	40	±0.08	3	-
	ETV-06		100	65	12	40		3	-
	ETV-10		100	102	15	32	±0.04	10	-
	ETV-14		200	135	22	40		25	-
	ETV-17		400	170	30	40		45	-
	ETV-22		750	220	50	40		85	-

Stroke (mm) and Max. speed(mm/s) \*1



\*1 Max. speed is estimated at 3,000rpm of installed motor.



Electric actuator Belt type

# ETV Series

• Applicable motor size: 100W • 200W • 400W • 750W



## Specifications

[Applicable motor size: 100W]

Descriptions		Model		
		ETV-05	ETV-06	ETV-10
Belt width	mm	9	12	15
Lead	mm	40	40	32
Repeatability	mm	±0.08		±0.04
Max. load capacity *1	Horizontal kg	3	3	10
	Vertical kg	-	-	-
Max. speed *1	mm/s	2000	2000	1600
Stroke length *2	mm	100 to 800	100 to 800	100 to 2550
Thrust force	N	42	42	61

\*1: Value at 0.4sec of acceleration and deceleration.

\*2: The stroke pitch is 50.

[Applicable motor size: 200W]

Descriptions		Model
		ETV-14
Belt width	mm	22
Lead	mm	40
Repeatability	mm	±0.04
Max. load capacity *1	Horizontal kg	25
	Vertical kg	-
Max. speed *1	mm/s	2000
Stroke length*2	mm	100 to 3050
Thrust force	N	100

\*1: Value at 0.4sec of acceleration and deceleration.

\*2: The stroke pitch is 50.

### CAUTION:

The motor is not installed on this product. Please obtain, install and adjust the motor and driver by yourself.

Max. speed is estimated at 3,000rpm of installed motor.

Thrust force and max. load capacity is estimated value at the rated torque of installed motor.

[Applicable motor size: 400W]

Descriptions		Model
		ETV-17
Belt width	mm	30
Lead	mm	40
Repeatability	mm	±0.04
Max. load capacity *1	Horizontal kg	45
	Vertical kg	-
Max. speed *1	mm/s	2000
Stroke length*2	mm	100 to 3500
Thrust force	N	204

\*1: Value at 0.4sec of acceleration and deceleration.

\*2: The stroke pitch is 50.

[Applicable motor size: 750W]

Descriptions		Model
		ETV-22
Belt width	mm	50
Lead	mm	40
Repeatability	mm	±0.04
Max. load capacity *1	Horizontal kg	85
	Vertical kg	-
Max. speed *1	mm/s	2000
Stroke length*2	mm	100 to 3500
Thrust force	N	367

\*1: Value at 0.4sec of acceleration and deceleration.

\*2: The stroke pitch is 50.

**CAUTION:**

The motor is not installed on this product. Please obtain, install and adjust the motor and driver by yourself.

Max. speed is estimated at 3,000rpm of installed motor.

Thrust force and max. load capacity is estimated value at the rated torque of installed motor.

## How to order

ETV - 06 - 40 010 - D M 1 X C B D

Model no.

**A** Body size

**B** Lead

**C** Stroke length

**D** Motor installation

**E** Installation motor specifications

**F** Motor size

**G** Belt type

**H** Home position sensor

**I** Limit sensor

**J** Option

### <Example of model number>

ETV-06-40010-DM1XCBD

- A** Body size: width 66×height 56mm
- B** Lead: 40mm
- C** Stroke length: 100mm
- D** Motor installation methods: Lower installation
- E** Installation motor specifications: MITSUBISHI
- F** Motor size: 100W
- G** Belt type: low-dust generation (Urethane)
- H** Origin sensor: Outside motor side
- I** Limit sensor: Outside
- J** Option: Installation direction Lower side  
Without grease nipple

- \***A** For body sizes "05" "06",
- G** Belt type "L" cannot be selected.

**E** Installation motor specifications (refer to the following page table3)

Manufacturer	100W	200W	400W	750W
MITSUBISHI	M	M	M	M
DELTA ELECTRONICS	M	M	M	M
SANYO DENKI	M	M	M	M
YASKAWA	Y	Y	Y	Y
KEYENCE JAPAN	Y	Y	Y	Y
PANASONIC	P	P	P	P
OMRON	M	P	P	P

Symbol	Descriptions
<b>A Body size (mm)</b>	
05	width 50×height 54
06	width 65×height 56
10	width 102×height 66
14	width 135×height 93
17	width 170×height 108
22	width 220×height 134
<b>B Lead (refer to the following page table1)</b>	
32	32mm
40	40mm
<b>C Stroke length (refer to the following page table1)</b>	
010 to 350	100mm to 3500mm (50mm pitch)Indication is 1/10.
<b>D Motor installation (refer to the following page table2)</b>	
U	Upper installation
D	Lower installation
R	Right installation
S	Upper right installation
T	Lower right installation
L	Left installation
V	Upper left installation
W	Lower left installation
<b>E Installation motor specifications</b>	
M	Select installation motor specifications from below table.
Y	
P	
<b>F Motor size (refer to the following page table2)</b>	
1	100W
2	200W
4	400W
8	750W
<b>G Belt type</b>	
X	Standard (Rubber)
L	Low-dust generation (Urethane)*
<b>H Home position sensor (1 pc.) (refer to the following page table4)</b>	
N	Without
C	Outside Motor side (Attached to ship)
D	Outside Motor opposition side (Attached to ship)
<b>I Limit sensor (with 2 units) (refer to the following page table4)</b>	
N	Without
B	Outside (Attached to ship)
<b>J Option (refer to the following page table5)</b>	
N	Body installation direction Standard/Without grease nipple
D	Body installation direction Lower side/Without grease nipple
R	Grease nipple right
L	Grease nipple left

### Installation position of the motor and the grease nipple

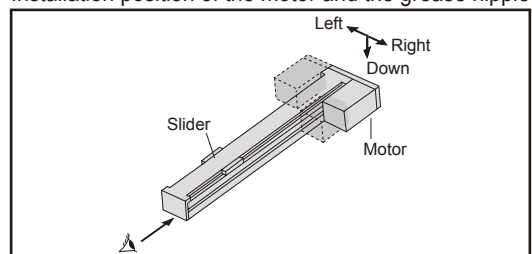




Table 1 **B** Lead and **C** Stroke

Model	<b>B</b> Lead (mm)		<b>C</b> Stroke length (mm) (50mm pitch)
	32	40	
ETV-05	–	○	100-800
ETV-06	–	○	100-800
ETV-10	○	–	100-2550
ETV-14	–	○	100-3050
ETV-17	–	○	100-3500
ETV-22	–	○	100-3500

○ Available  
– Not available

Table 2 **D** Motor installation and **F** Motor size

Model	<b>D</b> Motor installation									<b>F</b> Motor size			
	U Upper	D Lower	R Right	S Upper right	T Lower right	L Left	V Upper left	W Lower left	1 100W	2 200W	4 400W	8 750W	
ETV-05	○	○	–	–	–	–	–	–	○	–	–	–	
ETV-06	○	○	–	–	–	–	–	–	○	–	–	–	
ETV-10	–	–	○	○	○	○	○	○	○	–	–	–	
ETV-14	–	–	○	○	○	○	○	○	–	○	–	–	
ETV-17	–	–	○	○	○	○	○	○	–	–	○	–	
ETV-22	–	–	○	○	○	○	○	○	–	–	–	○	

○ Available – Not available

Table 3 **E** Installation motor specifications and motor model No. and rated output.

<b>E</b> Manufacturer	Motor (Without brake)	Motor (With brake)	Rated output	<b>E</b> Manufacturer	Motor (Without brake)	Motor (With brake)	Rated output
MITSUBISHI	HF-KP13	HF-KP13B	100W	KEYENCE JAPAN	SV-M010□□	SV-B010□□	100W
	HF-KP23	HF-KP23B	200W		SV-M020□□	SV-B020□□	200W
	HF-KP43	HF-KP43B	400W		SV-M040□□	SV-B040□□	400W
	HF-KP73	HF-KP73B	750W		SV-M075□□	SV-B075□□	750W
DELTA ELECTRONICS	ECMA-C10401□S		100W	PANASONIC	MSMD012G1A	MSMD012G1B	100W
	ECMA-C10602□S		200W		MSMD022G1A	MSMD022G1B	200W
	ECMA-C10604□S		400W		MSMD042G1A	MSMD042G1B	400W
	ECMA-C10807□S		750W		MSMD082G1A	MSMD082G1B	750W
SANYO DENKI	R2AA04010FX	R2AA04010FC	100W		OMRON	R88M-K10030H	R88M-K10030H-B
	R2AA06020FX	R2AA06020FC	200W	R88M-K20030□		R88M-K20030□-B	200W
	R2AA06040HX	R2AA06040HC	400W	R88M-K40030□		R88M-K40030□-B	400W
	–	–	750W	R88M-K75030H		R88M-K75030H-B	750W
YASKAWA	SGMJV-01ADA21	SGMJV-01ADA21C	100W				
	SGMJV-02ADA21	SGMJV-02ADA21C	200W				
	SGMJV-04ADA21	SGMJV-04ADA21C	400W				
	SGMJV-08ADA21	SGMJV-08ADA21C	750W				

\*Please inquire about other motor manufactures or models.

Table 4 **H** Home position sensor and **I** Limit sensor

Model	<b>H</b> Home position sensor (1 pc.)			<b>I</b> Limit sensor (2 pc.)	
	Without*1	Outside		Without*1	Outside
		Motor side	Motor opposition side		
ETV-05	○	○	○	○	○
ETV-06	○	○	○	○	○
ETV-10	○	○	○	○	○
ETV-14	○	○	○	○	○
ETV-17	○	○	○	○	○
ETV-22	○	○	○	○	○

○ Available  
– Not available

\*1: Origin sensor and limit sensor are a pair. When either is Nil, select Nil for the other.  
Example: Set of origin sensor Nil and limit sensor Outside is not available.

\*2: Sensor direction is adjustable by yourself (Attached to ship)

Table 5 **J** Motor installation method and options

Model	<b>J</b> Option								
	U Upper	D Lower	R Right	S Upper right	T Lower right	L Left	V Upper left	W Lower left	
ETV-05	N only (Body installation direction: standard (Lower side only))								
ETV-06	N: Body installation direction: standard (Upper $\phi$ 4.5 spot facing) D: Body installation direction: M5 from base under surface								
ETV-10 to 22	–		N/L				N/R		

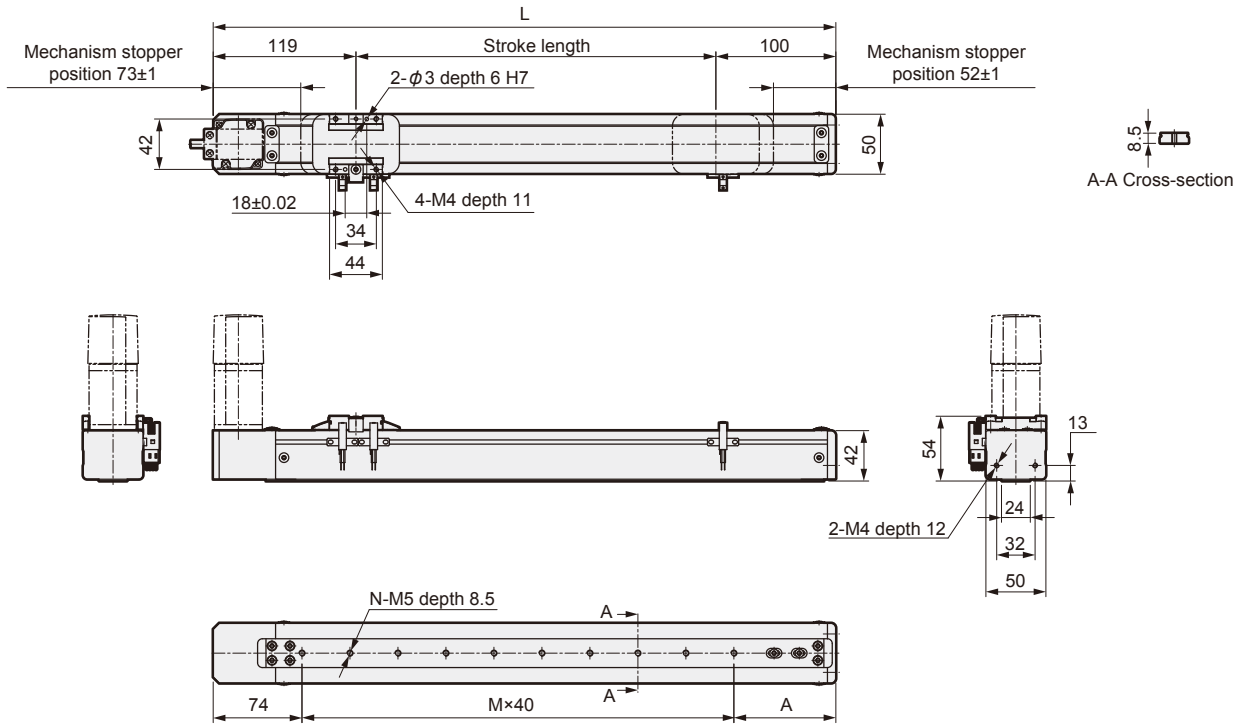
\*1: Grease nipple cannot be mounted on ETV 05 and 06.

\*2: ETV-06 is the body installation direction indication. "N": installation direction Standard or "D": installation direction Select lower side.

\*3: ETV-10 to 22 are the grease nipple installation option indication. Please choose "N": none, "R": Right, "L": Left.

## Dimensions (ETV-05)

- ETV-05-\*\*-U (Motor installation: Upper installation)

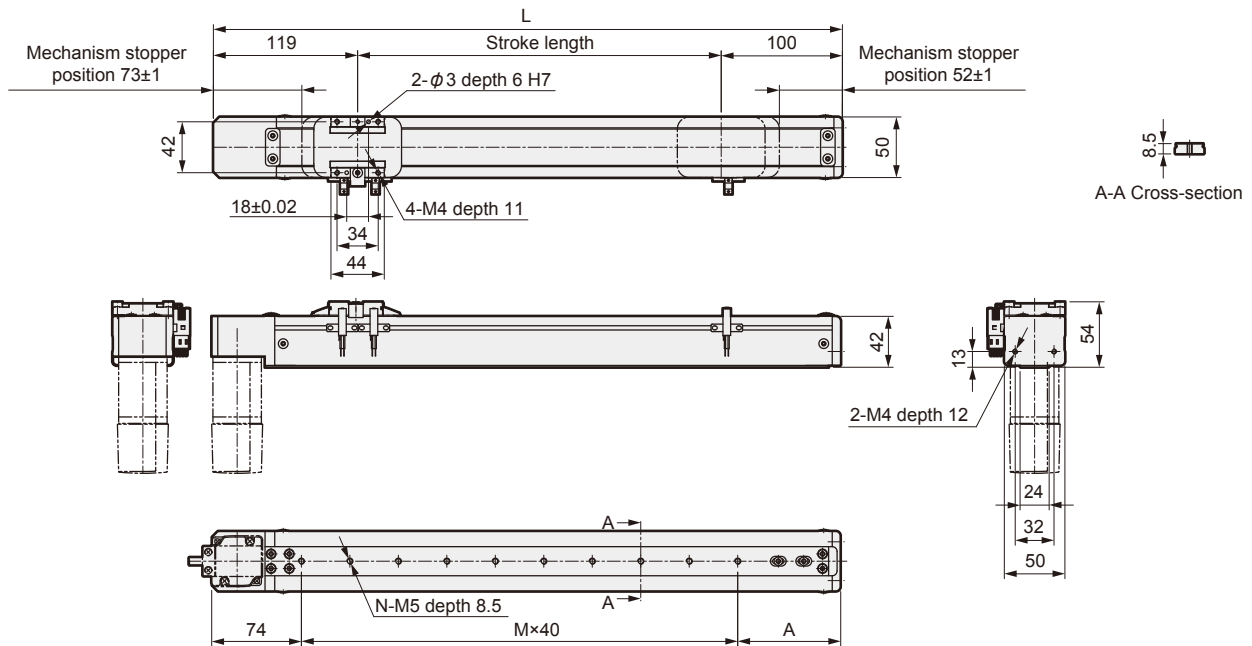


Note: Refer to page 6 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019
A	85	95	65	75	85	95	65	75	85	95	65	75	85	95	65
M	4	5	7	8	9	10	12	13	14	15	17	18	19	20	22
N	5	6	8	9	10	11	13	14	15	16	18	19	20	21	23
Weight (kg)	2.2	2.3	2.4	2.5	2.7	2.8	2.8	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7

## Dimensions (ETV-05)

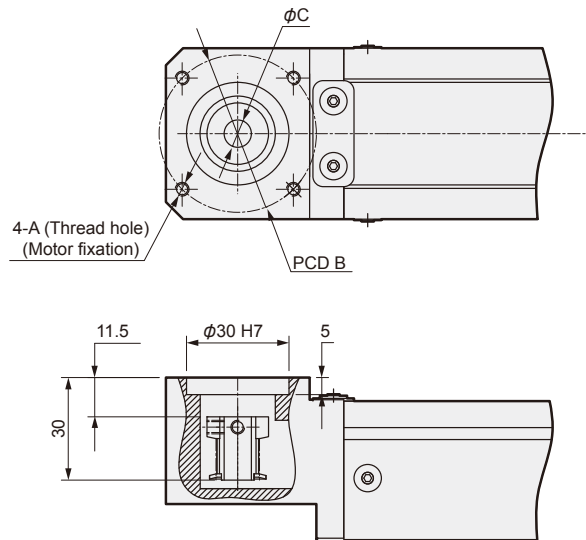
- ETV-05-\*\*-D (Motor installation: Lower installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	319	369	419	469	519	569	619	669	719	769	819	869	919	969	1019
A	85	95	65	75	85	95	65	75	85	95	65	75	85	95	65
M	4	5	7	8	9	10	12	13	14	15	17	18	19	20	22
N	5	6	8	9	10	11	13	14	15	16	18	19	20	21	23
Weight (kg)	2.2	2.3	2.4	2.5	2.7	2.8	2.8	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7

## Motor installation Dimensions (ETV-05)

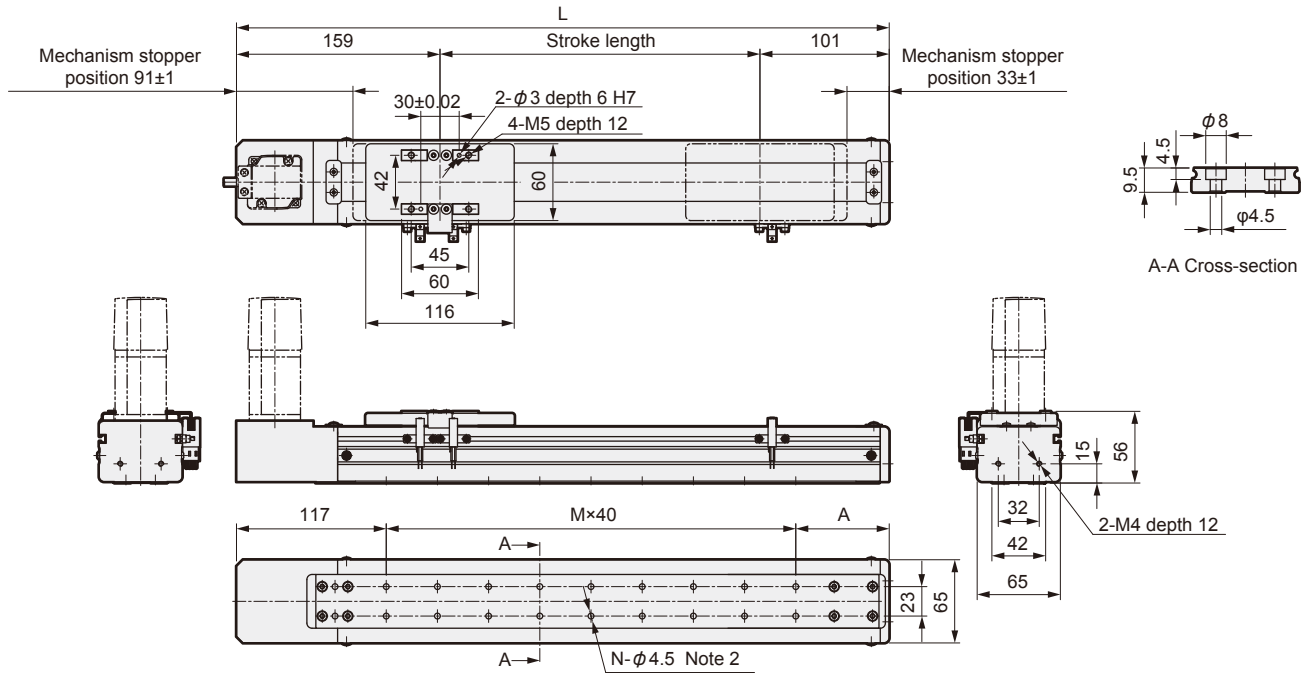
- ETV-05-U/D



ETV-05-U/D					
Installation motor specifications		A	B	C	Motor screw
M	100W	M4	$\phi 46$	$\phi 8$	4-M4×L12
Y	100W	M4	$\phi 46$	$\phi 8$	4-M4×L12
P	100W	M3	$\phi 45$	$\phi 8$	4-M3×L12

## Dimensions (ETV-06)

- ETV-06-\*\*-U (Motor installation: Upper installation)

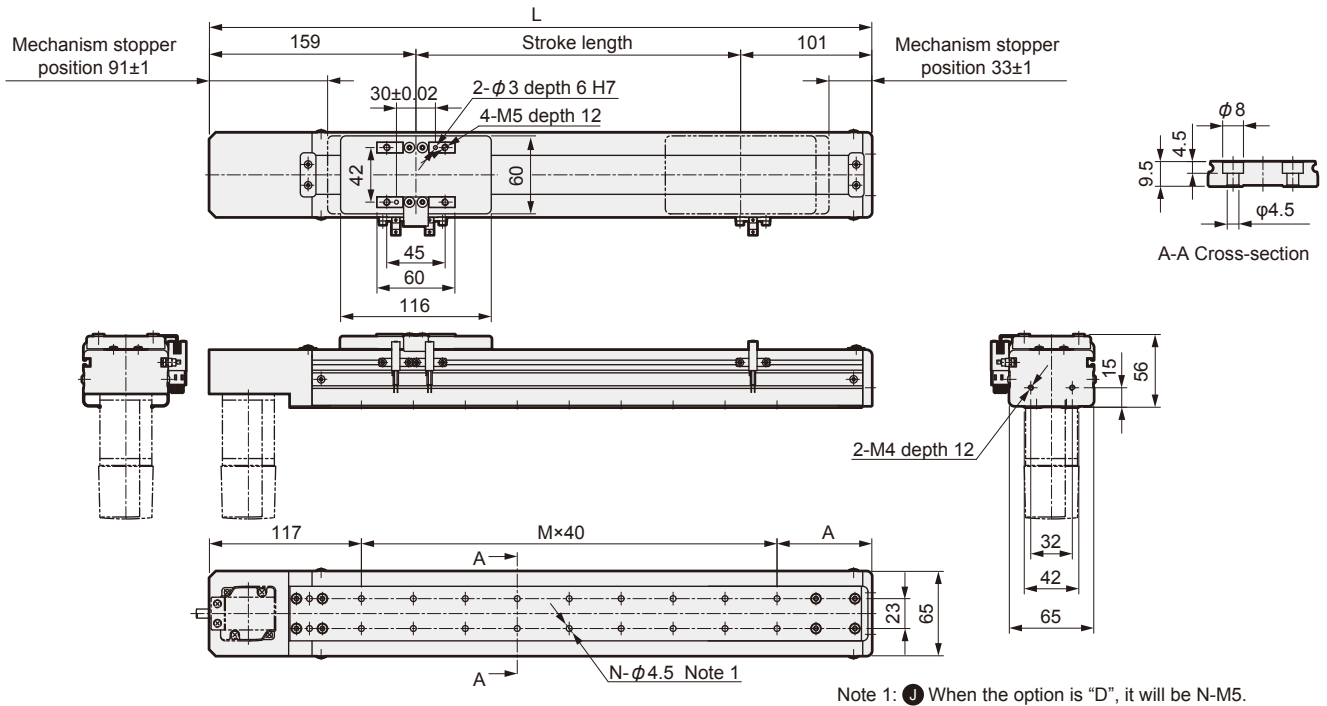


Note 1: Refer to page 8 for motor installation dimensions.  
 Note 2: When the option is "D", it will be N-M5.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	360	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060
A	83	93	63	73	83	93	63	73	83	93	63	73	83	93	63
M	4	5	7	8	9	10	12	13	14	15	17	18	19	20	22
N	10	12	16	18	20	22	26	28	30	32	36	38	40	42	46
Weight (kg)	2.5	2.6	2.8	3.0	3.3	3.4	3.5	3.7	3.9	4.1	4.2	4.4	4.6	4.8	4.9

## Dimensions (ETV-06)

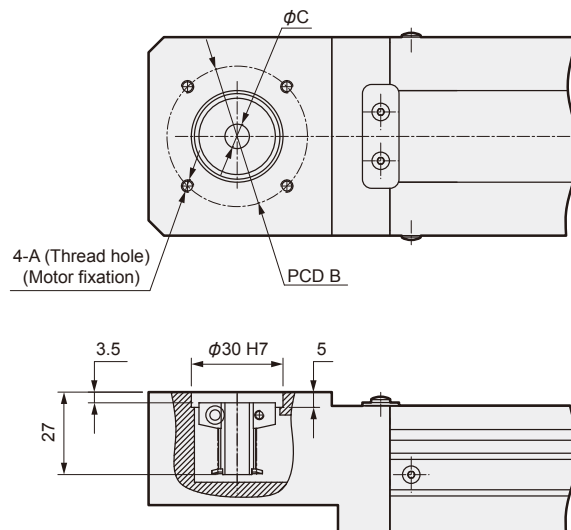
### • ETV-06-\*\*-D (Motor installation: Lower installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800
L	360	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060
A	83	93	63	73	83	93	63	73	83	93	63	73	83	93	63
M	4	5	7	8	9	10	12	13	14	15	17	18	19	20	22
N	10	12	16	18	20	22	26	28	30	32	36	38	40	42	46
Weight (kg)	2.5	2.6	2.8	3.0	3.3	3.4	3.5	3.7	3.9	4.1	4.2	4.4	4.6	4.8	4.9

## Motor installation Dimensions (ETV-06)

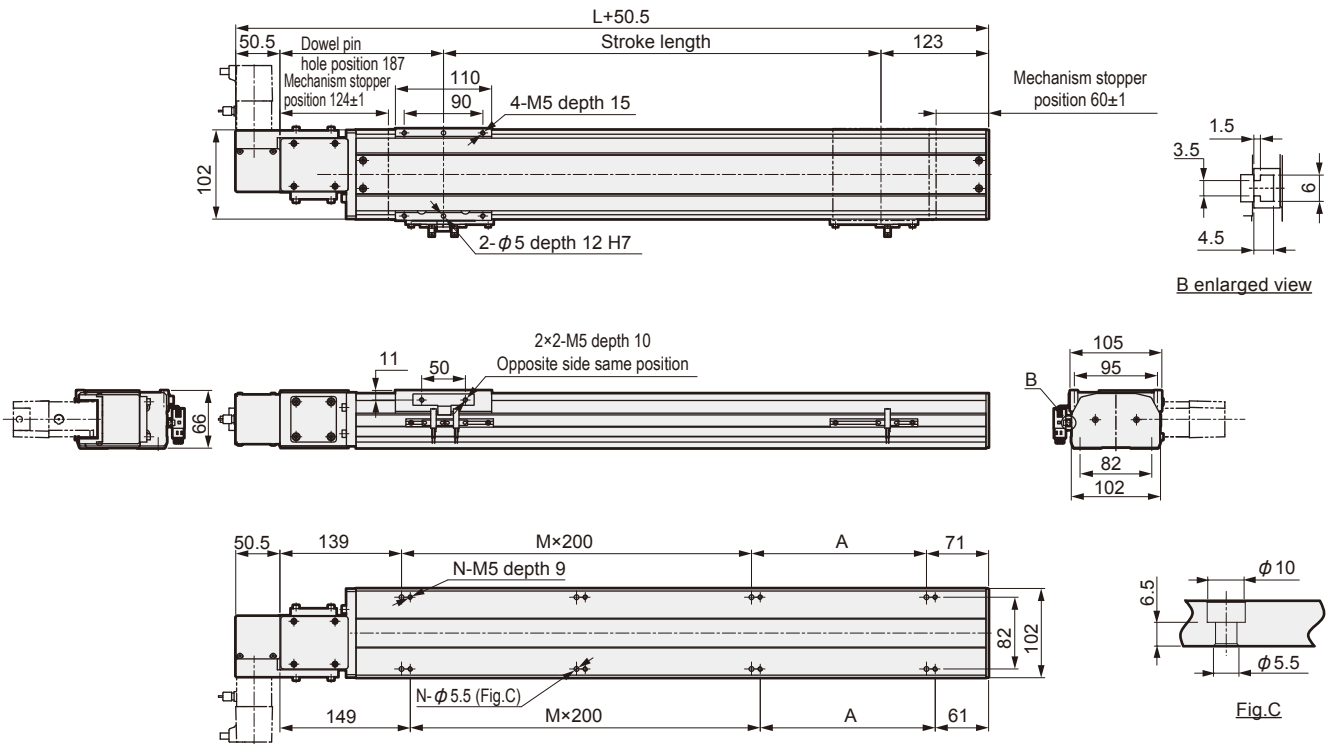
### • ETV-06-U/D



ETV-06-U/D					
Installation motor specifications		A	B	C	Motor screw
M	100W	M4	φ46	φ8	4-M4×L12
Y	100W	M4	φ46	φ8	4-M4×L12
P	100W	M3	φ45	φ8	4-M3×L12

## Dimensions (ETV-10)

- ETV-10-\*\*-R (Motor installation: Right installation)



Note: Refer to page 14 for motor installation dimensions.

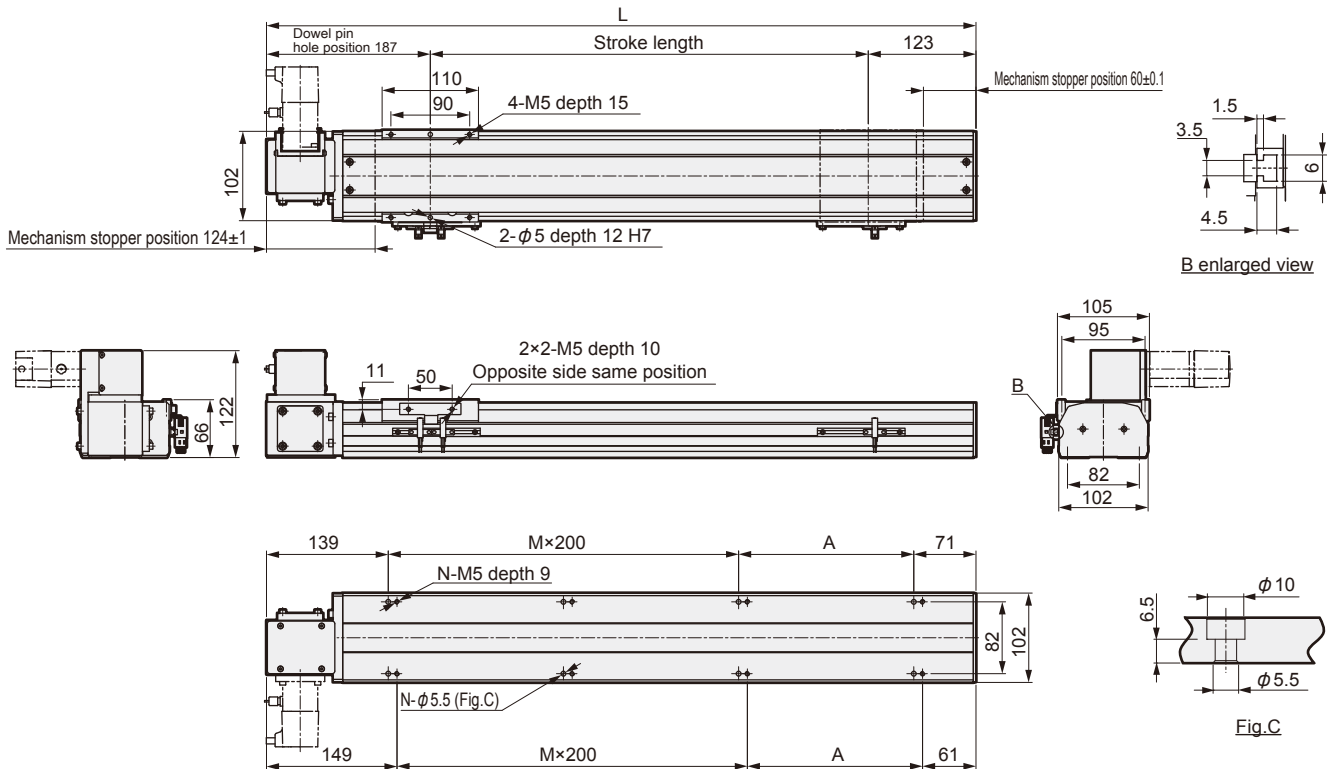
Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
L	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	6.8	7.2	7.7	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9	12.3	12.7	13.2	13.6	14.0	14.4	14.8	15.3	15.7	16.1	16.5	16.9

Stroke length (mm)	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13
N	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30
Weight (kg)	17.4	17.8	18.2	18.6	19.0	19.5	19.9	20.3	20.7	21.1	21.6	22.0	22.4	22.8	23.2	23.7	24.1	24.5	24.9	25.3	25.8	26.2	26.6	27.0	27.4



### Dimensions (ETV-10)

- ETV-10-\*\*-S (Motor installation: Upper right installation)



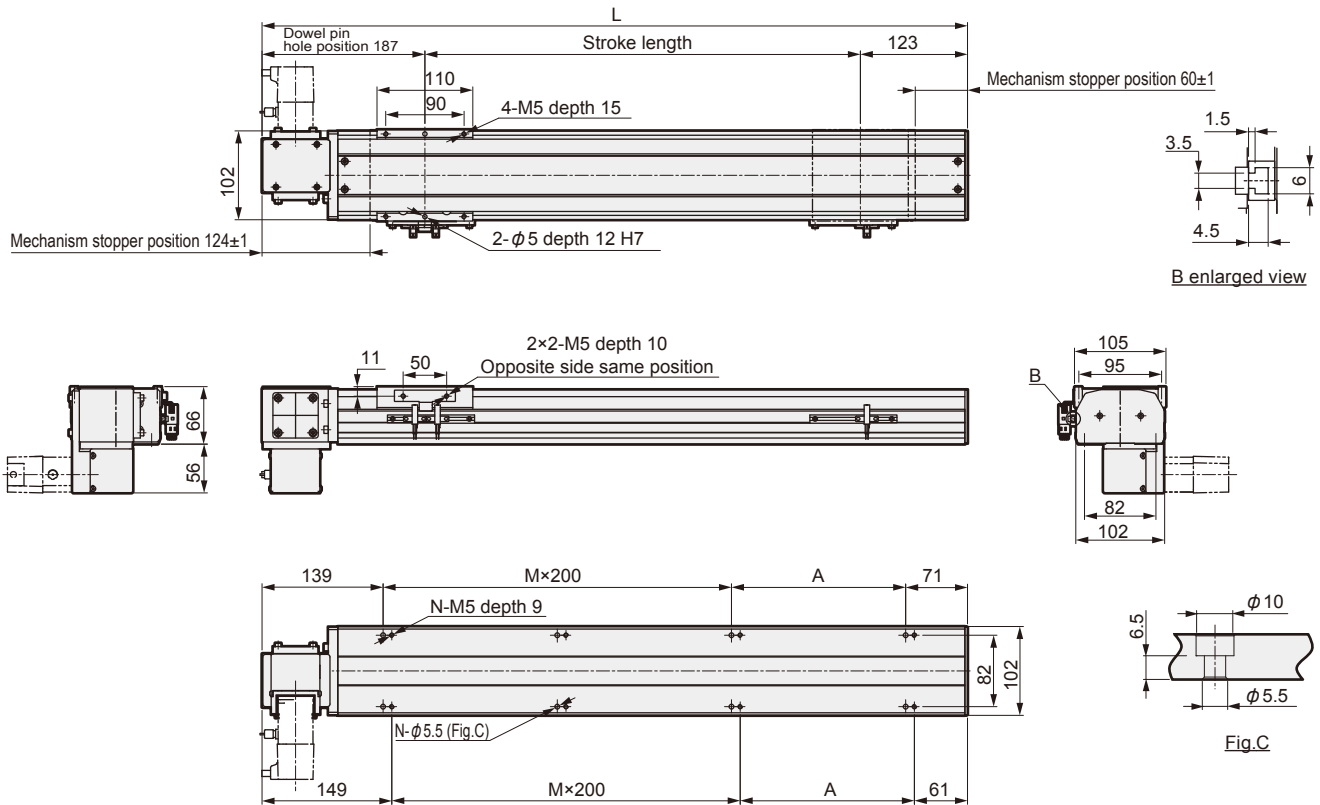
Note: Refer to page 14 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
L	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	6.8	7.2	7.7	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9	12.3	12.7	13.2	13.6	14.0	14.4	14.8	15.3	15.7	16.1	16.5	16.9

Stroke length (mm)	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13
N	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30
Weight (kg)	17.4	17.8	18.2	18.6	19.0	19.5	19.9	20.3	20.7	21.1	21.6	22.0	22.4	22.8	23.2	23.7	24.1	24.5	24.9	25.3	25.8	26.2	26.6	27.0	27.4

## Dimensions (ETV-10)

- ETV-10-\*\*-T (Motor installation: Lower right installation)



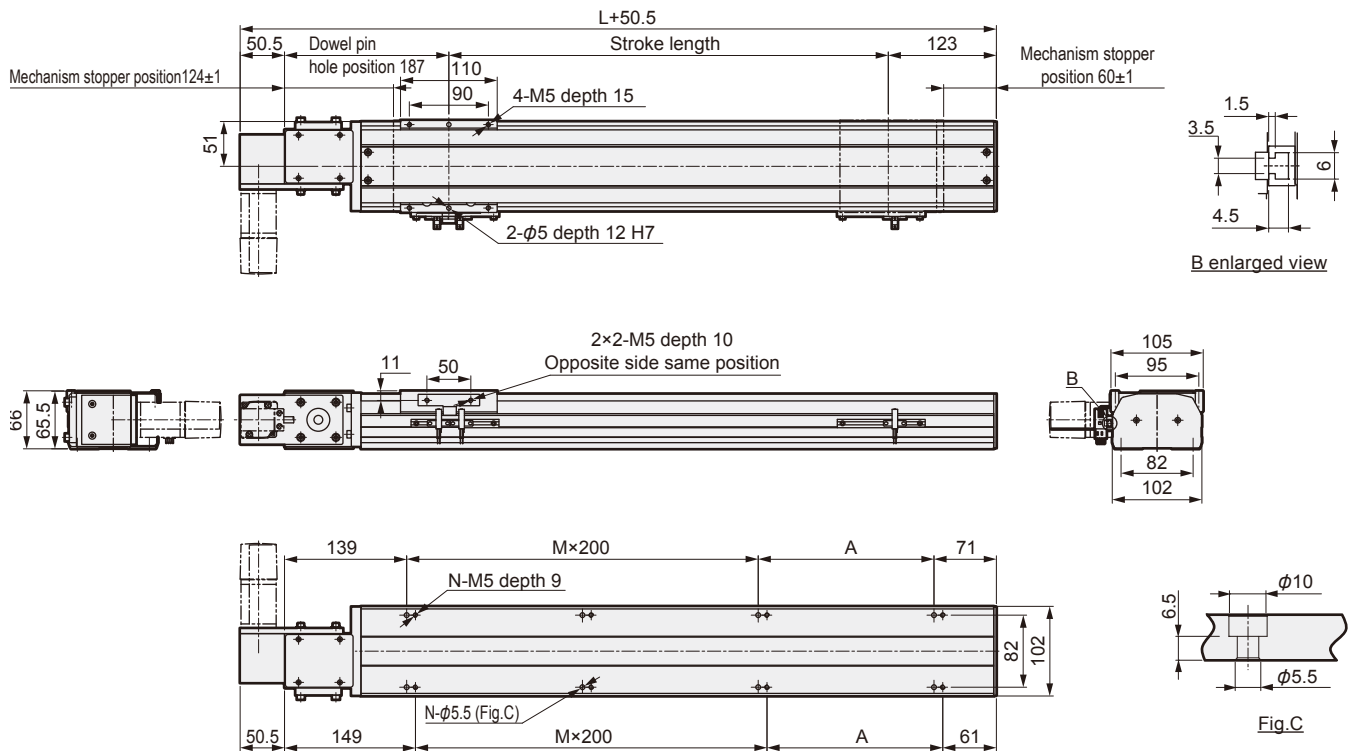
Note: Refer to page 14 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
L	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	6.8	7.2	7.7	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9	12.3	12.7	13.2	13.6	14.0	14.4	14.8	15.3	15.7	16.1	16.5	16.9

Stroke length (mm)	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13
N	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30
Weight (kg)	17.4	17.8	18.2	18.6	19.0	19.5	19.9	20.3	20.7	21.1	21.6	22.0	22.4	22.8	23.2	23.7	24.1	24.5	24.9	25.3	25.8	26.2	26.6	27.0	27.4

### Dimensions (ETV-10)

- ETV-10-\*\*-L (Motor installation: Left installation)



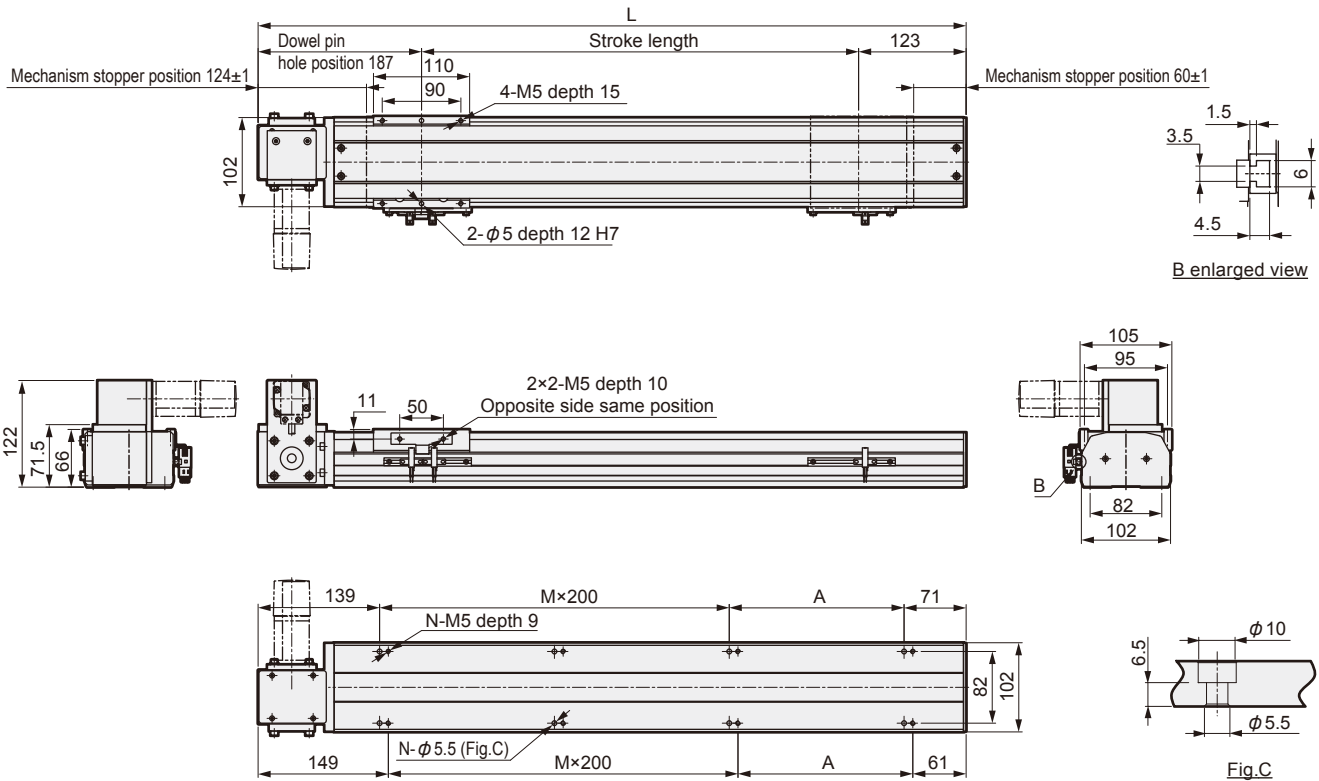
Note: Refer to page 14 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
L	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	6.8	7.2	7.7	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9	12.3	12.7	13.2	13.6	14.0	14.4	14.8	15.3	15.7	16.1	16.5	16.9

Stroke length (mm)	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	11	12	12	12	13
N	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	26	28	28	28	30
Weight (kg)	17.4	17.8	18.2	18.6	19.0	19.5	19.9	20.3	20.7	21.1	21.6	22.0	22.4	22.8	23.2	23.7	24.1	24.5	24.9	25.3	25.8	26.2	26.6	27.0	27.4

## Dimensions (ETV-10)

- ETV-10-\*\*-V (Motor installation: Upper left installation)



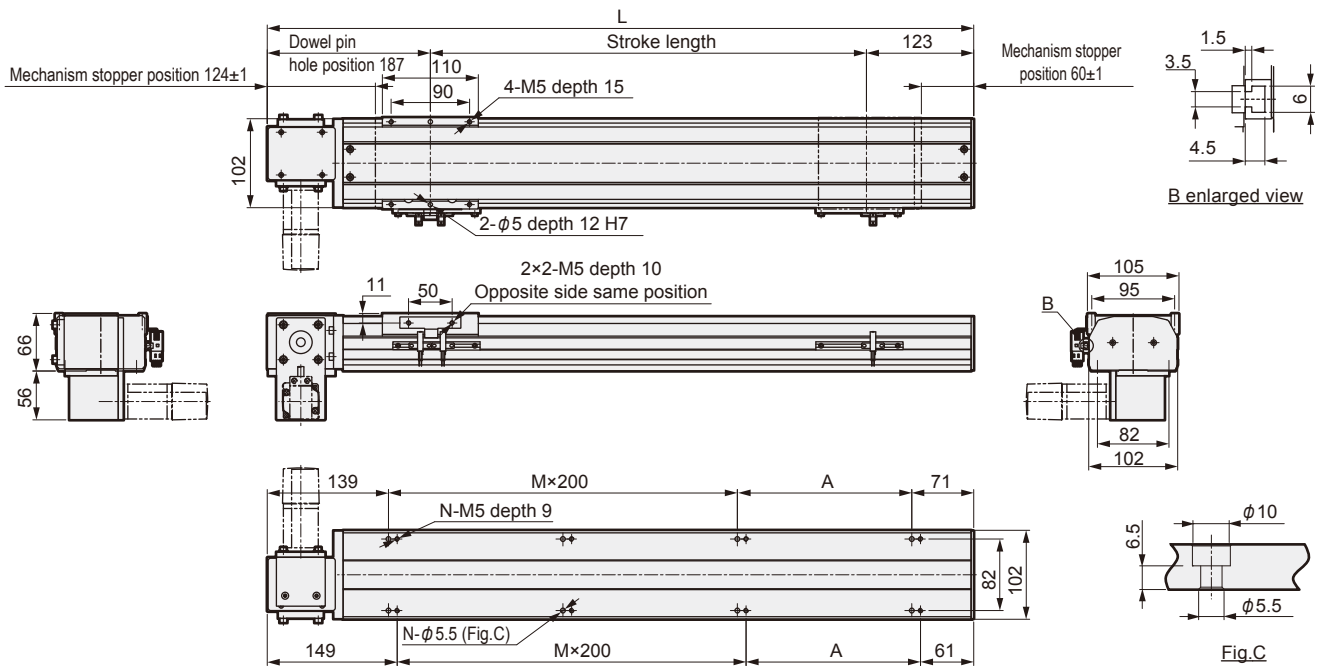
Note: Refer to page 14 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
L	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	6.8	7.2	7.7	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9	12.3	12.7	13.2	13.6	14.0	14.4	14.8	15.3	15.7	16.1	16.5	16.9

Stroke length (mm)	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13
N	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30
Weight (kg)	17.4	17.8	18.2	18.6	19.0	19.5	19.9	20.3	20.7	21.1	21.6	22.0	22.4	22.8	23.2	23.7	24.1	24.5	24.9	25.3	25.8	26.2	26.6	27.0	27.4

### Dimensions (ETV-10)

- ETV-10-\*\*-W (Motor installation: Lower left installation)

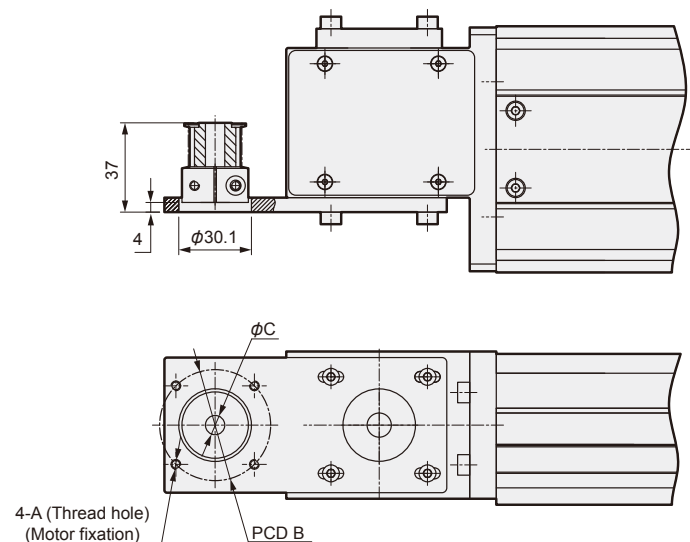


Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300
L	410	460	510	560	610	660	710	760	810	860	910	960	1010	1060	1110	1160	1210	1260	1310	1360	1410	1460	1510	1560	1610
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	0	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6
N	4	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16
Weight (kg)	6.8	7.2	7.7	8.1	8.5	8.9	9.3	9.8	10.2	10.6	11.0	11.5	11.9	12.3	12.7	13.2	13.6	14.0	14.4	14.8	15.3	15.7	16.1	16.5	16.9

Stroke length (mm)	1350	1400	1450	1500	1550	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550
L	1660	1710	1760	1810	1860	1910	1960	2010	2060	2110	2160	2210	2260	2310	2360	2410	2460	2510	2560	2610	2660	2710	2760	2810	2860
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13
N	18	18	18	18	20	20	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30
Weight (kg)	17.4	17.8	18.2	18.6	19.0	19.5	19.9	20.3	20.7	21.1	21.6	22.0	22.4	22.8	23.2	23.7	24.1	24.5	24.9	25.3	25.7	26.2	26.6	27.0	27.4

### Motor installation Dimensions (ETV-10)

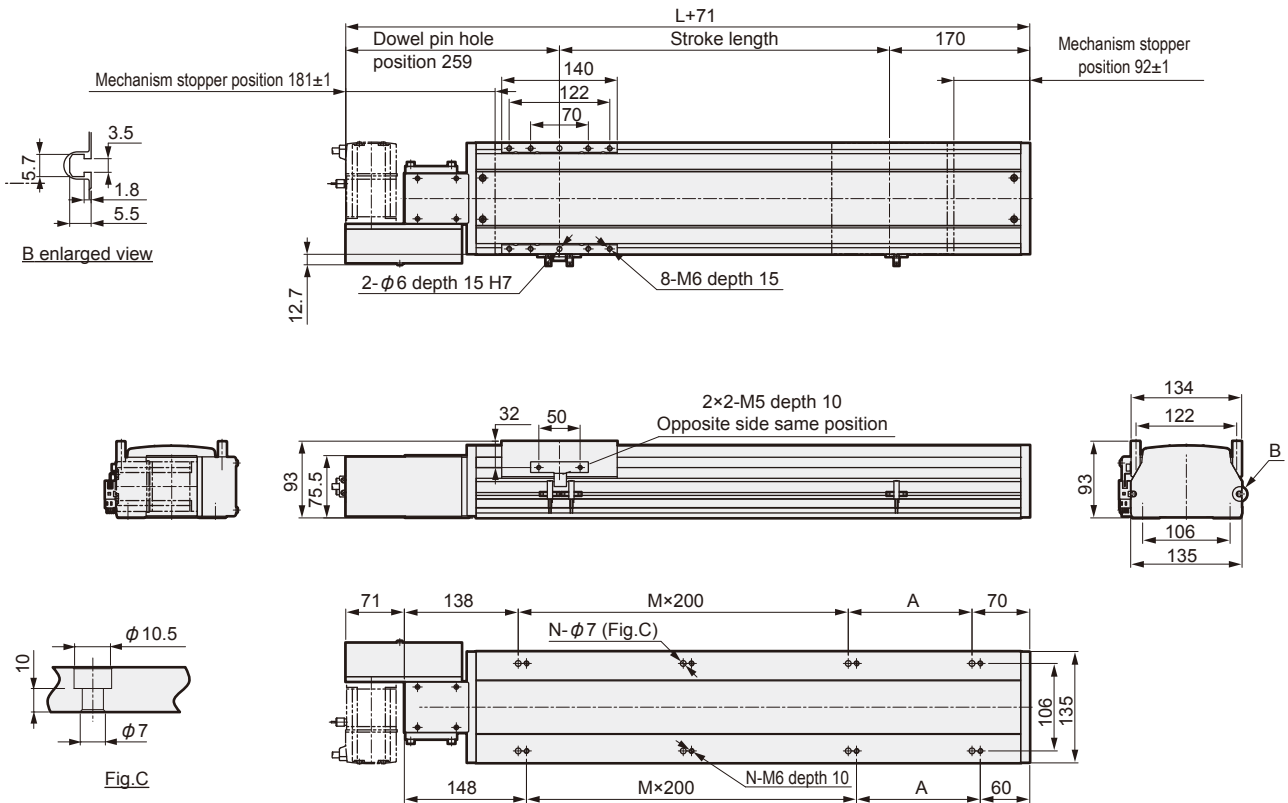
- ETV-10-R/S/T/L/V/W



ETV-10-R/S/T/L/V/W				
Installation motor specifications	A	B	C	Motor screw
M 100W	M4	φ46	φ8	4-M4×L12
Y 100W	M4	φ46	φ8	4-M4×L12
P 100W	M3	φ45	φ8	4-M3×L12

## Dimensions (ETV-14)

### • ETV-14-\*\*-R (Motor installation: Right installation)



Note: Refer to page 20 for motor installation dimensions.

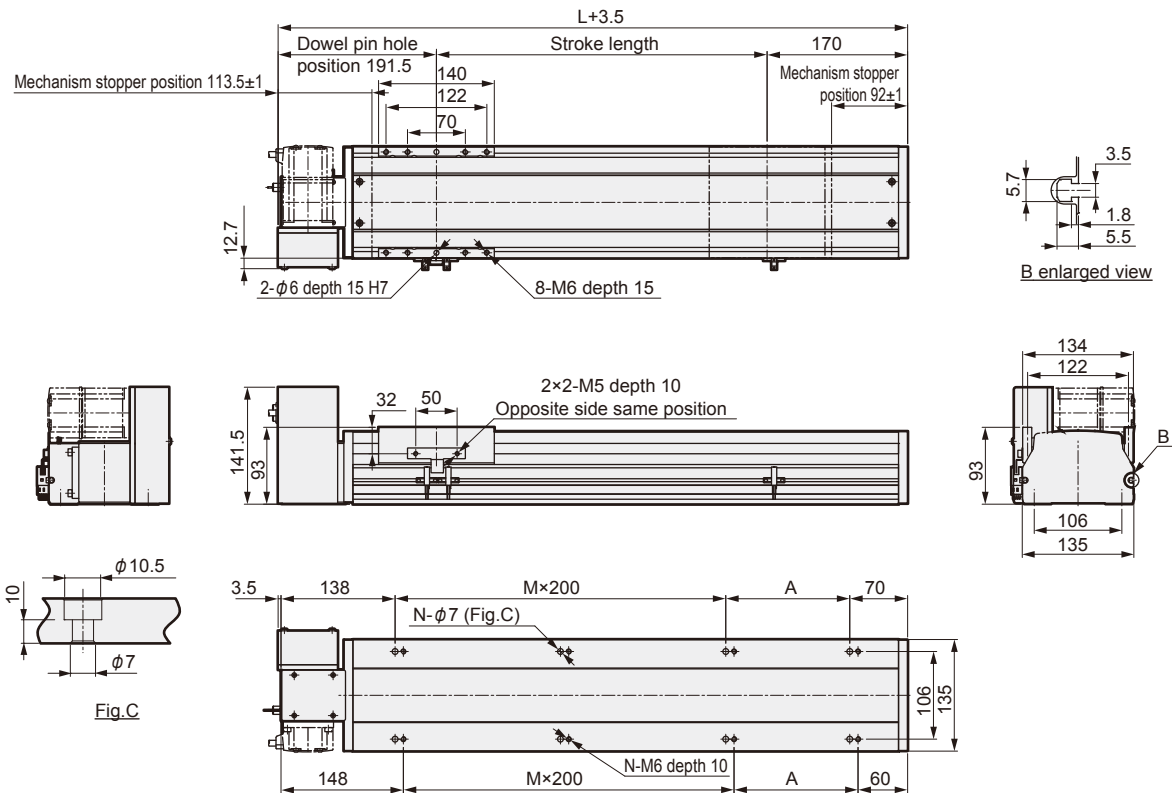
Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	458	508	558	608	658	708	758	808	858	908	958	1008	1058	1108	1158	1208	1258	1308	1358	1408	1458	1508	1558	1608	1658	1708	1758	1808	1858	1908
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	8.6	9.0	9.5	10.0	10.5	11.0	11.4	12.0	12.4	13.0	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	17.3	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.1	22.7	23.3	23.9

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1958	2008	2058	2108	2158	2208	2258	2308	2358	2408	2458	2508	2558	2608	2658	2708	2758	2808	2858	2908	2958	3008	3058	3108	3158	3208	3258	3308	3358	3408
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
N	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
Weight (kg)	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.5	34.1	34.7	35.3	35.9	36.5	37.1	37.7	38.3	38.9	39.5	40.1	40.7	41.3	41.9



### Dimensions (ETV-14)

- ETV-14-\*\*-S (Motor installation: Upper right installation)



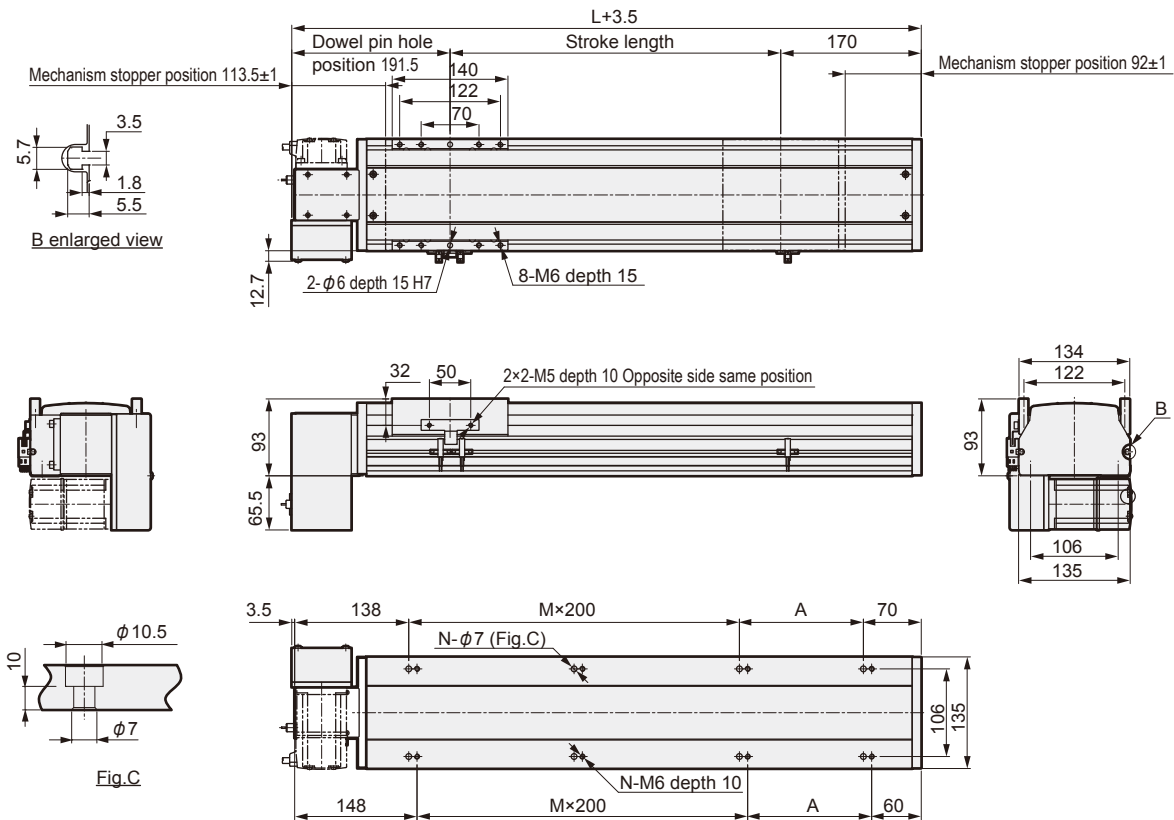
Note: Refer to page 20 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	458	508	558	608	658	708	758	808	858	908	958	1008	1058	1108	1158	1208	1258	1308	1358	1408	1458	1508	1558	1608	1658	1708	1758	1808	1858	1908
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	8.6	9.0	9.5	10.0	10.5	11.0	11.4	12.0	12.4	13.0	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	17.3	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.1	22.7	23.3	23.9

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1958	2008	2058	2108	2158	2208	2258	2308	2358	2408	2458	2508	2558	2608	2658	2708	2758	2808	2858	2908	2958	3008	3058	3108	3158	3208	3258	3308	3358	3408
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
N	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
Weight (kg)	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.5	34.1	34.7	35.3	35.9	36.5	37.1	37.7	38.3	38.9	39.5	40.1	40.7	41.3	41.9

## Dimensions (ETV-14)

- ETV-14-\*\*-T (Motor installation: Lower right installation)



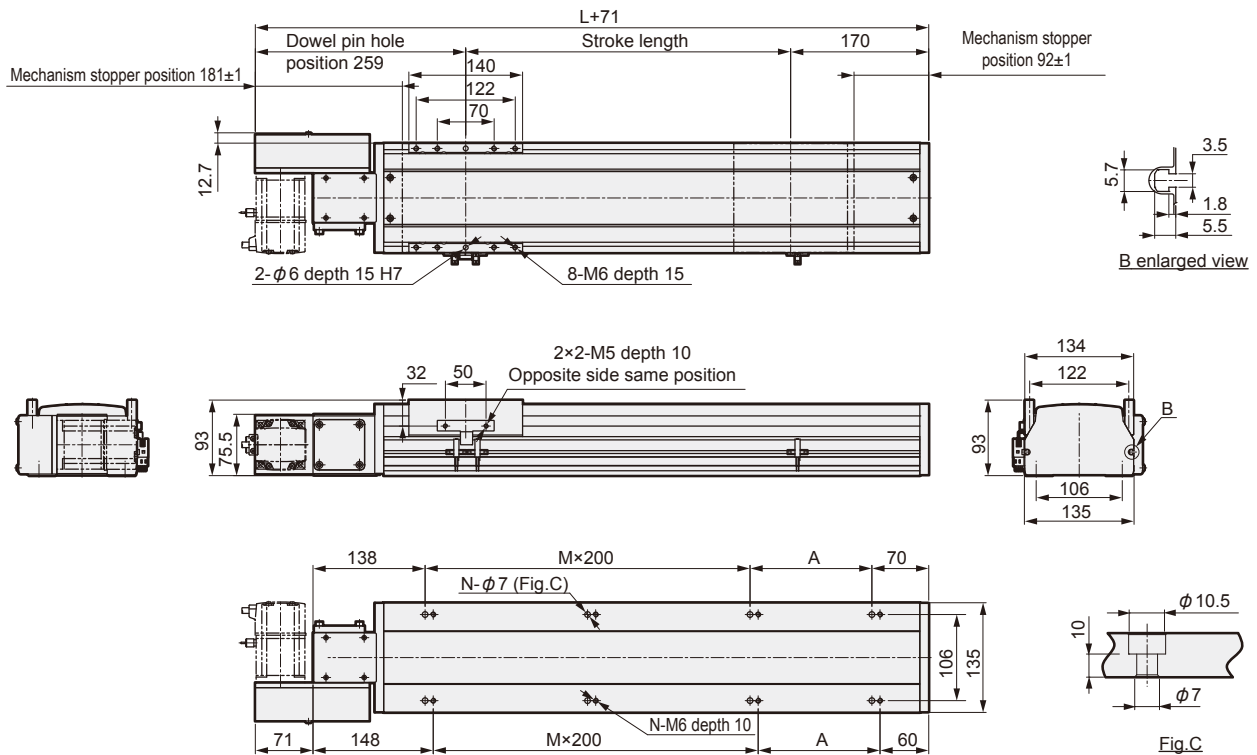
Note: Refer to page 20 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	458	508	558	608	658	708	758	808	858	908	958	1008	1058	1108	1158	1208	1258	1308	1358	1408	1458	1508	1558	1608	1658	1708	1758	1808	1858	1908
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	8.6	9.0	9.5	10.0	10.5	11.0	11.4	12.0	12.4	13.0	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	17.3	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.1	22.7	23.3	23.9

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1958	2008	2058	2108	2158	2208	2258	2308	2358	2408	2458	2508	2558	2608	2658	2708	2758	2808	2858	2908	2958	3008	3058	3108	3158	3208	3258	3308	3358	3408
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
N	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
Weight (kg)	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.5	34.1	34.7	35.3	35.9	36.5	37.1	37.7	38.3	38.9	39.5	40.1	40.7	41.3	41.9

### Dimensions (ETV-14)

- ETV-14-\*\*-L (Motor installation: Left installation)



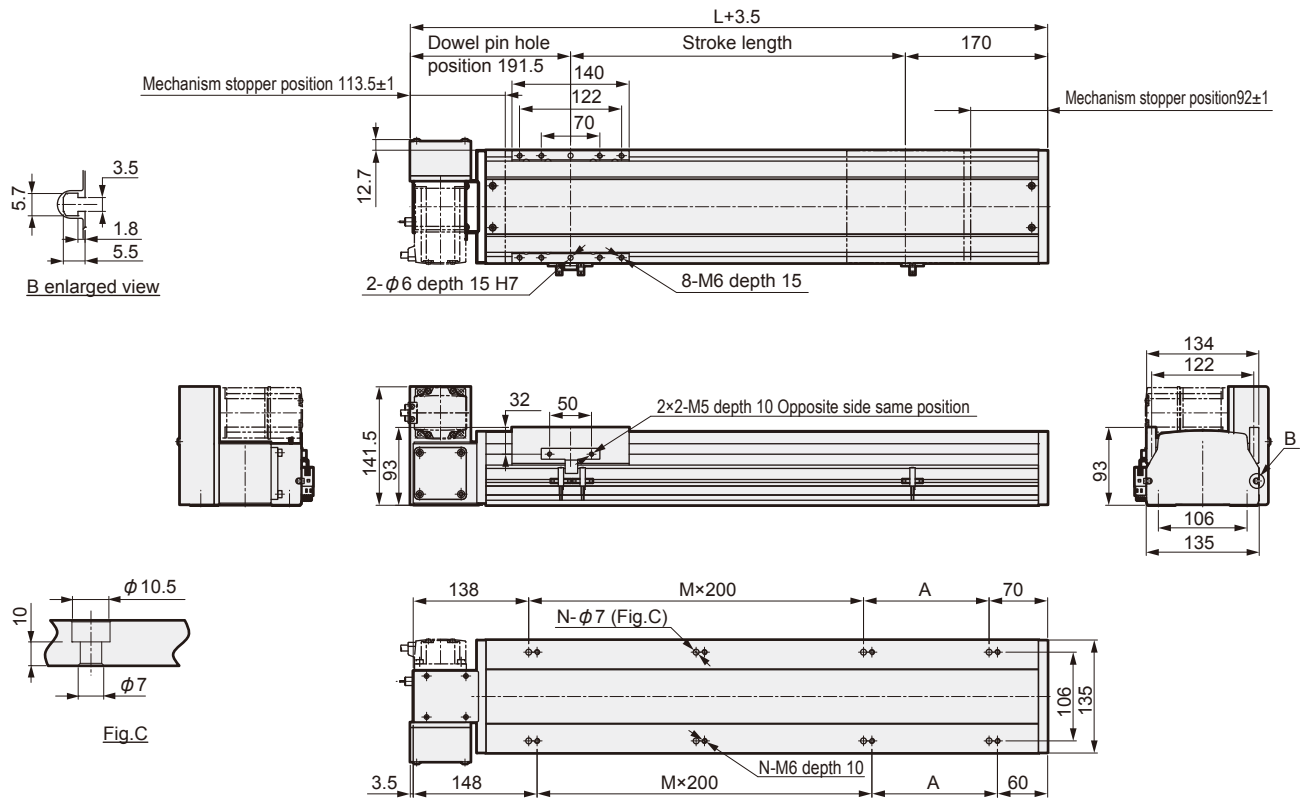
Note: Refer to page 20 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	458	508	558	608	658	708	758	808	858	908	958	1008	1058	1108	1158	1208	1258	1308	1358	1408	1458	1508	1558	1608	1658	1708	1758	1808	1858	1908
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	50	200	50	100	150	200	50	100
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	8.6	9.0	9.5	10.0	10.5	11.0	11.4	12.0	12.4	13.0	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	17.3	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.1	22.7	23.3	23.9

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1958	2008	2058	2108	2158	2208	2258	2308	2358	2408	2458	2508	2558	2608	2658	2708	2758	2808	2858	2908	2958	3008	3058	3108	3158	3208	3258	3308	3358	3408
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
N	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
Weight (kg)	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.5	34.1	34.7	35.3	35.9	36.5	37.1	37.7	38.3	38.9	39.5	40.1	40.7	41.3	41.9

## Dimensions (ETV-14)

- ETV-14-\*\*-V (Motor installation: Upper left installation)



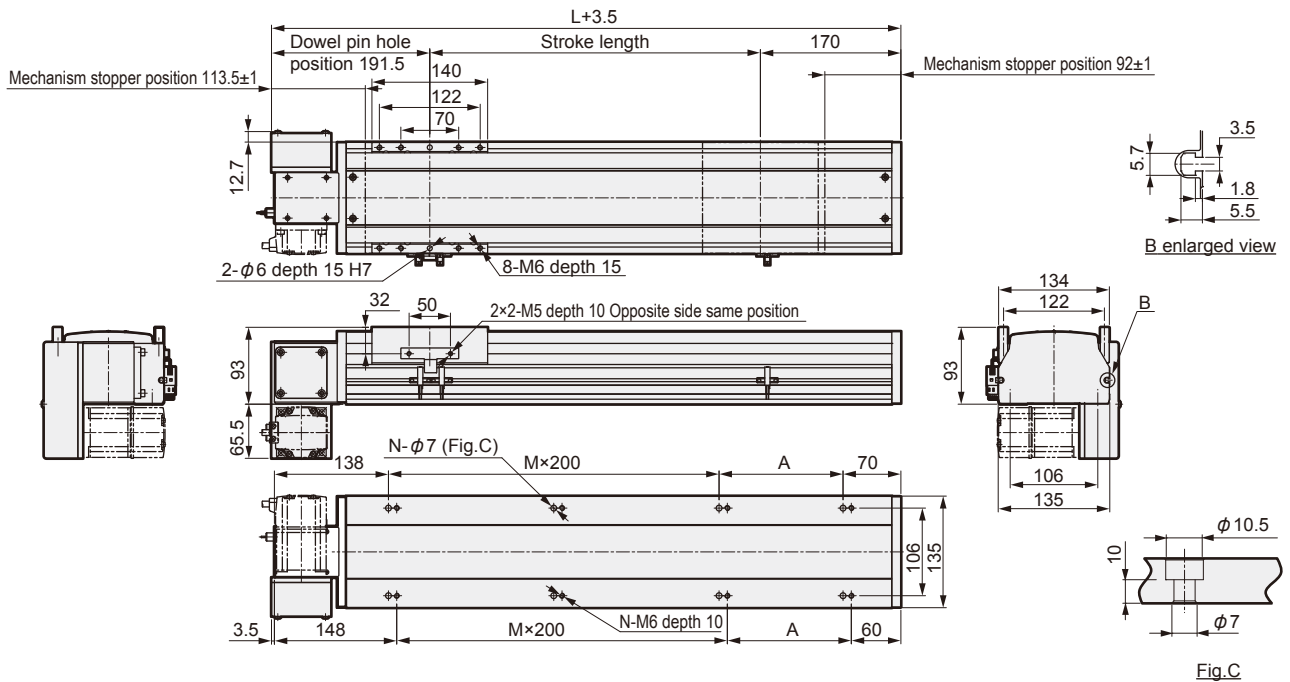
Note: Refer to page 20 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	458	508	558	608	658	708	758	808	858	908	958	1008	1058	1108	1158	1208	1258	1308	1358	1408	1458	1508	1558	1608	1658	1708	1758	1808	1858	1908
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	8.6	9.0	9.5	10.0	10.5	11.0	11.4	12.0	12.4	13.0	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	17.3	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.1	22.7	23.3	23.9

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1958	2008	2058	2108	2158	2208	2258	2308	2358	2408	2458	2508	2558	2608	2658	2708	2758	2808	2858	2908	2958	3008	3058	3108	3158	3208	3258	3308	3358	3408
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15
N	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
Weight (kg)	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.5	34.1	34.7	35.3	35.9	36.5	37.1	37.7	38.3	38.9	39.5	40.1	40.7	41.3	41.9

### Dimensions (ETV-14)

- ETV-14-\*\*-W (Motor installation: Lower left installation)



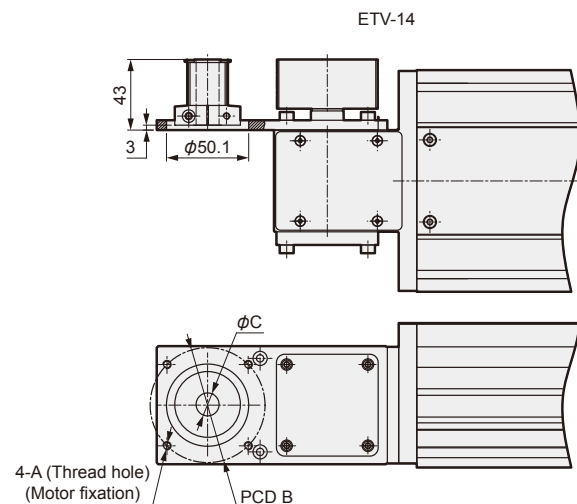
Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	458	508	558	608	658	708	758	808	858	908	958	1008	1058	1108	1158	1208	1258	1308	1358	1408	1458	1508	1558	1608	1658	1708	1758	1808	1858	1908
A	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100
M	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8
N	6	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20
Weight (kg)	8.6	9.0	9.5	10.0	10.5	11.0	11.4	12.0	12.4	13.0	13.4	13.9	14.4	14.9	15.4	15.9	16.4	16.9	17.3	17.9	18.5	19.1	19.7	20.3	20.9	21.5	22.1	22.7	23.3	23.9

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1958	2008	2058	2108	2158	2208	2258	2308	2358	2408	2458	2508	2558	2608	2658	2708	2758	2808	2858	2908	2958	3008	3058	3108	3158	3208	3258	3308	3358	3408
A	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200
M	8	8	9	9	9	10	10	10	10	10	11	11	11	12	12	12	12	13	13	13	13	13	14	14	14	14	15	15	15	15
N	20	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34
Weight (kg)	24.5	25.1	25.7	26.3	26.9	27.5	28.1	28.7	29.3	29.9	30.5	31.1	31.7	32.3	32.9	33.5	34.1	34.7	35.3	35.9	36.5	37.1	37.7	38.3	38.9	39.5	40.1	40.7	41.3	41.9

### Motor installation Dimensions (ETV-14)

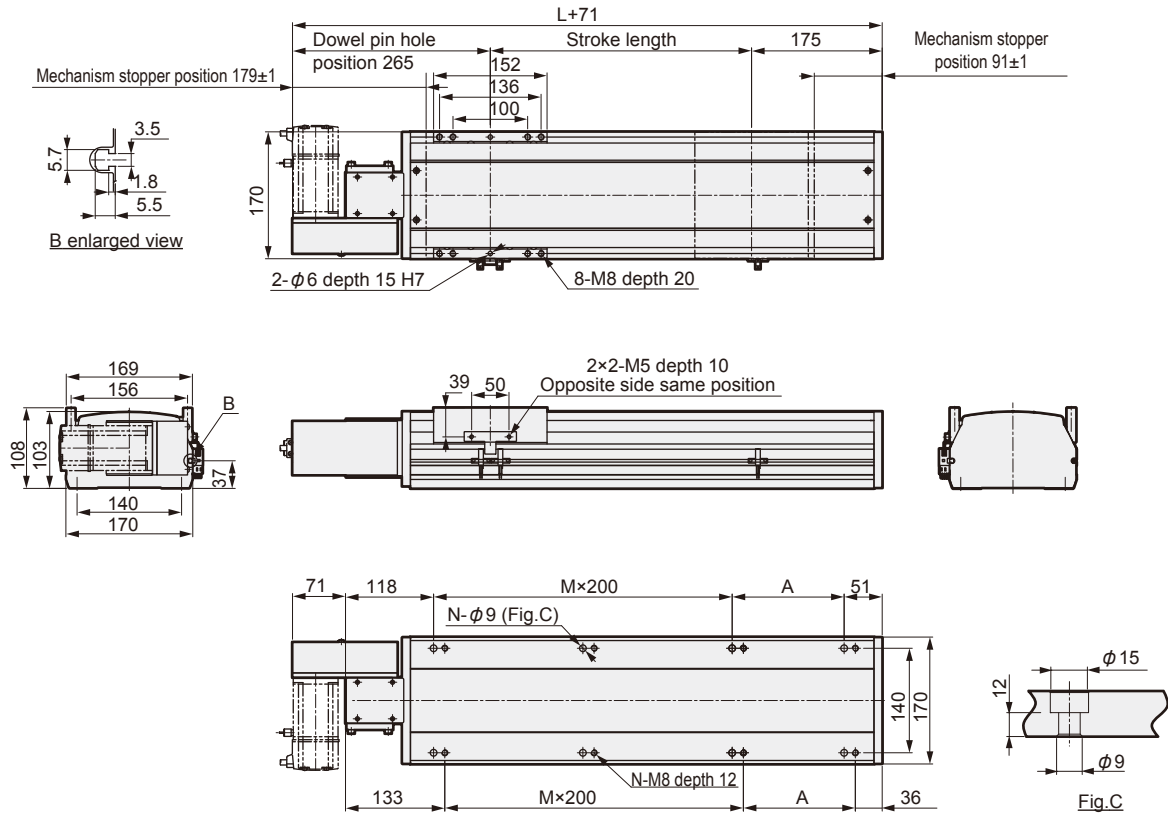
- ETV-14-R/S/T/L/V/W



ETV-10-R/S/T/L/V/W				
Installation motor specifications	A	B	C	Motor screw
M 200W	M5	φ 70	φ 14	4-M5×L12
Y 200W	M5	φ 70	φ 14	4-M5×L12
P 200W	M4	φ 70	φ 11	4-M4×L12

## Dimensions (ETV-17)

### • ETV-17-\*\*-R (Motor installation: Right installation)



Note: Refer to page 26 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619	1669	1719	1769	1819	1869	1919
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	12.0	13.8	14.6	15.4	16.1	16.9	17.7	18.5	19.2	20.0	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0	35.8

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1969	2019	2069	2119	2169	2219	2269	2319	2369	2419	2469	2519	2569	2619	2669	2719	2769	2819	2869	2919	2969	3019	3069	3119	3169	3219	3269	3319	3369	3419
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.2	43.0	43.8	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.2	51.0	51.8	52.6	53.4	54.2	55.0	55.8	56.6	57.4	58.2	59.0	59.8

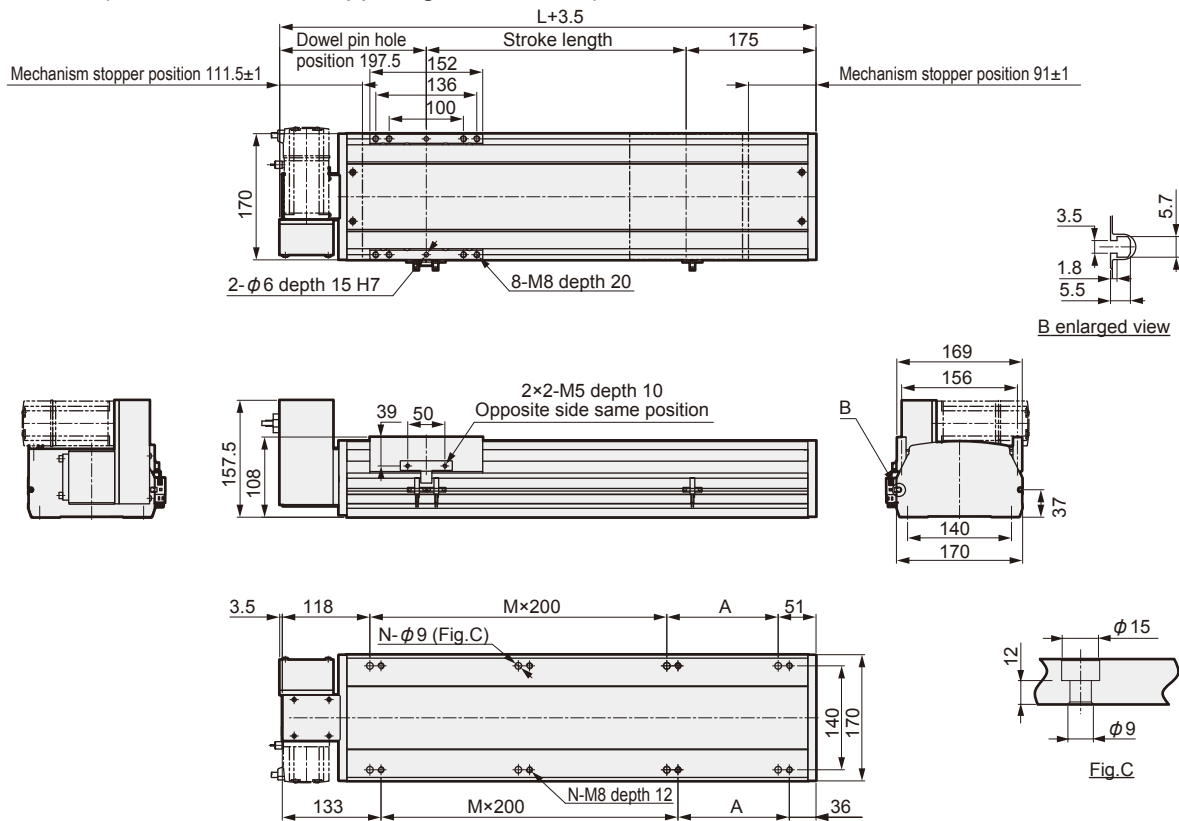
  

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3469	3519	3569	3619	3669	3719	3769	3819	3869
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	60.6	61.4	62.2	63.0	63.8	64.6	65.4	66.2	67.0



### Dimensions (ETV-17)

- ETV-17-\*\*-S (Motor installation: Upper right installation)



Note: Refer to page 26 for motor installation dimensions.

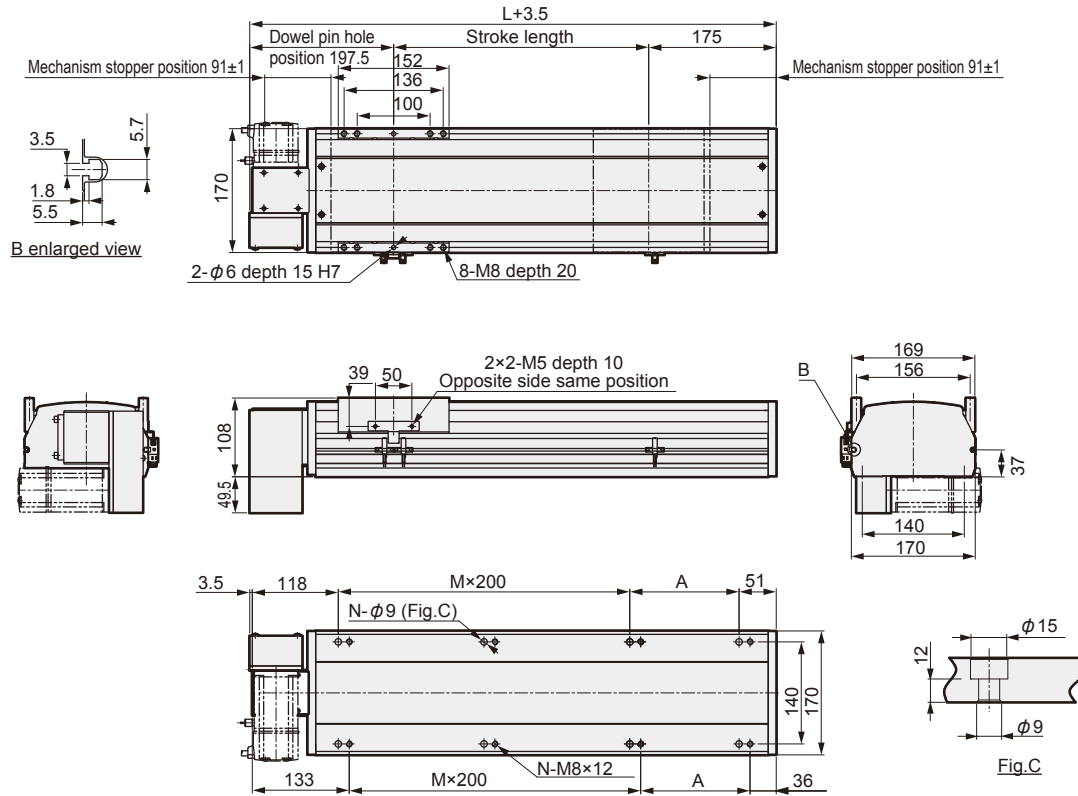
Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619	1669	1719	1769	1819	1869	1919
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	12.0	13.8	14.6	15.4	16.1	16.9	17.7	18.5	19.2	20.0	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0	35.8

Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1969	2019	2069	2119	2169	2219	2269	2319	2369	2419	2469	2519	2569	2619	2669	2719	2769	2819	2869	2919	2969	3019	3069	3119	3169	3219	3269	3319	3369	3419
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.2	43.0	43.8	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.2	51.0	51.8	52.6	53.4	54.2	55.0	55.8	56.6	57.4	58.2	59.0	59.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3469	3519	3569	3619	3669	3719	3769	3819	3869
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	60.6	61.4	62.2	63.0	63.8	64.6	65.4	66.2	67.0

## Dimensions (ETV-17)

### • ETV-17-\*\*-T (Motor installation: Lower right installation)

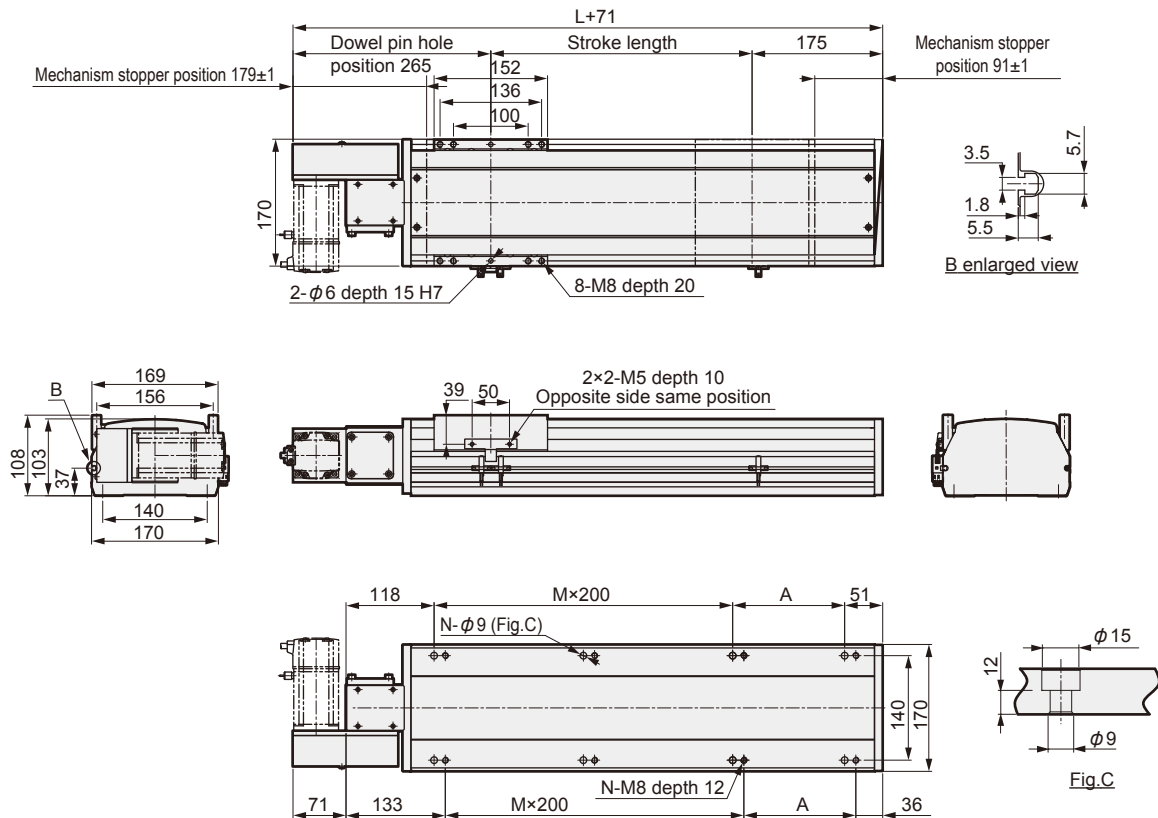


Note: Refer to page 26 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619	1669	1719	1769	1819	1869	1919
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	12.0	13.8	14.6	15.4	16.1	16.9	17.7	18.5	19.2	20.0	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0	35.8
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1969	2019	2069	2119	2169	2219	2269	2319	2369	2419	2469	2519	2569	2619	2669	2719	2769	2819	2869	2919	2969	3019	3069	3119	3169	3219	3269	3319	3369	3419
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.2	43.0	43.8	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.2	51.0	51.8	52.6	53.4	54.2	55.0	55.8	56.6	57.4	58.2	59.0	59.8
Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500																					
L	3469	3519	3569	3619	3669	3719	3769	3819	3869																					
A	100	150	200	50	100	150	200	50	100																					
M	16	16	16	17	17	17	17	18	18																					
N	36	36	36	38	38	38	38	40	40																					
Weight (kg)	60.6	61.4	62.2	63.0	63.8	64.6	65.4	66.2	67.0																					

### Dimensions (ETV-17)

• ETV-17-\*\*-L (Motor installation: Left installation)



Note: Refer to page 26 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619	1669	1719	1769	1819	1869	1919
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	12.0	13.8	14.6	15.4	16.1	16.9	17.7	18.5	19.2	20.0	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0	35.8

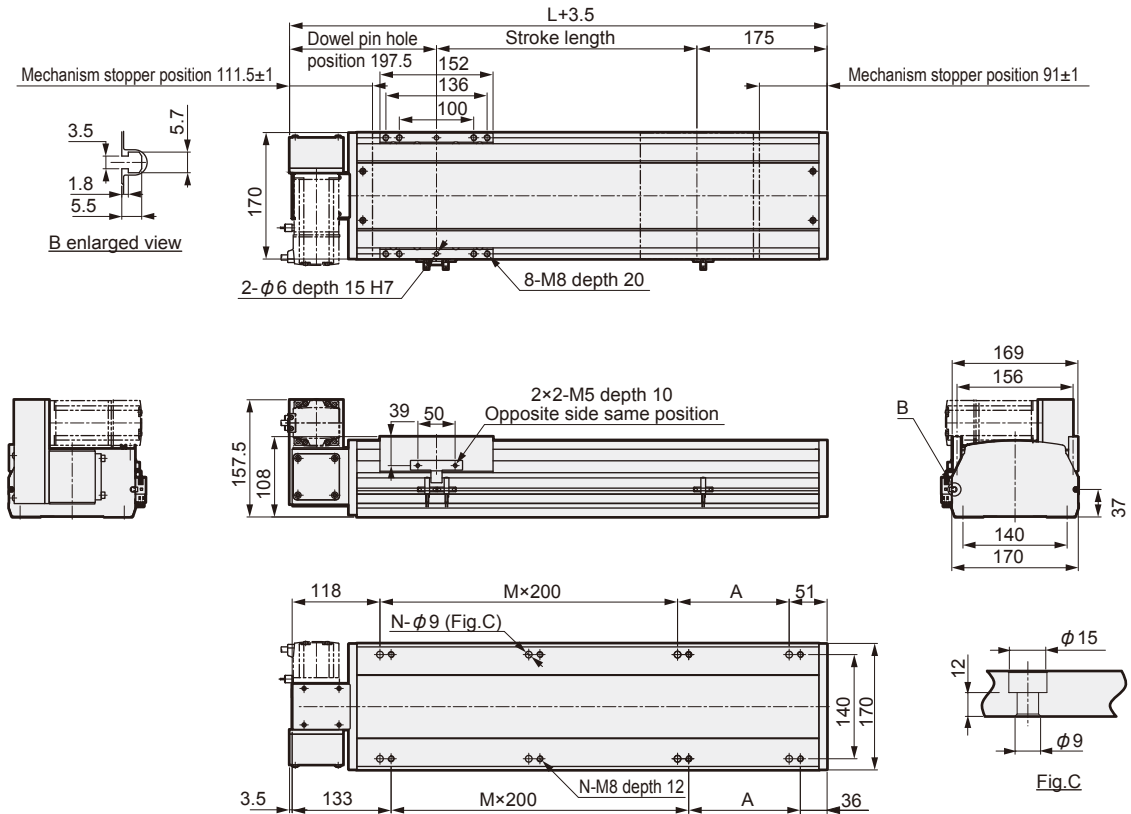
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1969	2019	2069	2119	2169	2219	2269	2319	2369	2419	2469	2519	2569	2619	2669	2719	2769	2819	2869	2919	2969	3019	3069	3119	3169	3219	3269	3319	3369	3419
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.2	43.0	43.8	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.2	51.0	51.8	52.6	53.4	54.2	55.0	55.8	56.6	57.4	58.2	59.0	59.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3469	3519	3569	3619	3669	3719	3769	3819	3869
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	60.6	61.4	62.2	63.0	63.8	64.6	65.4	66.2	67.0

## Dimensions (ETV-17)

### • ETV-17-\*\*-V (Motor installation: Upper left installation)



Note: Refer to page 26 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619	1669	1719	1769	1819	1869	1919
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	12.0	13.8	14.6	15.4	16.1	16.9	17.7	18.5	19.2	20.0	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0	35.8

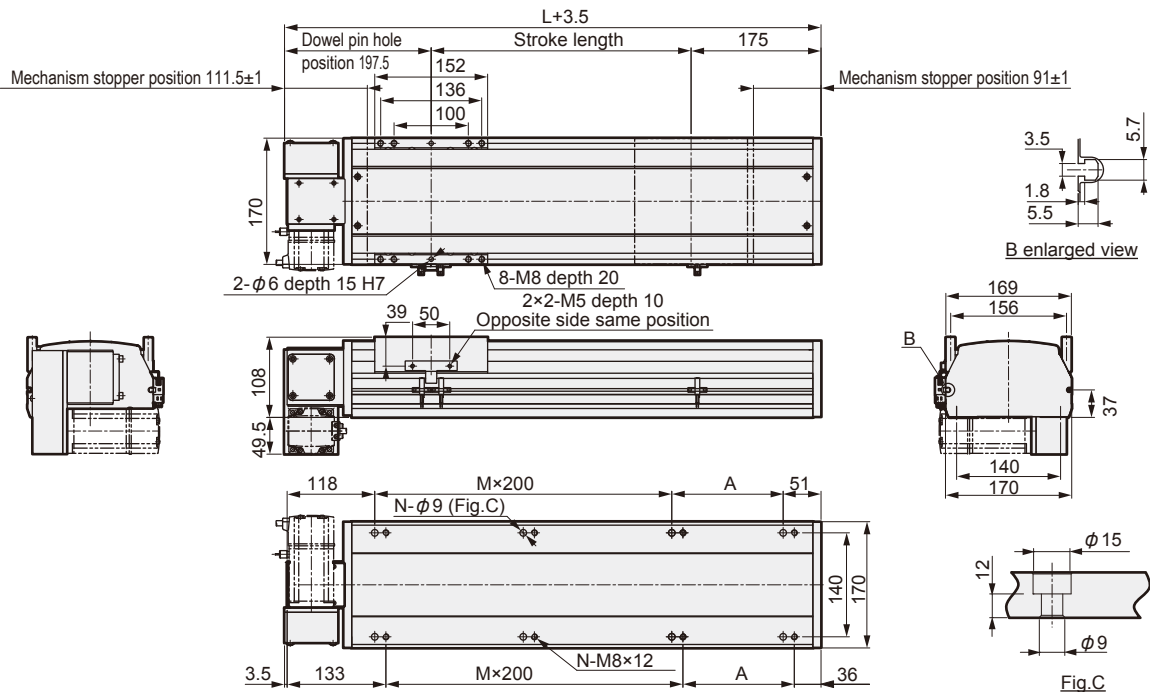
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1969	2019	2069	2119	2169	2219	2269	2319	2369	2419	2469	2519	2569	2619	2669	2719	2769	2819	2869	2919	2969	3019	3069	3119	3169	3219	3269	3319	3369	3419
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.2	43.0	43.8	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.2	51.0	51.8	52.6	53.4	54.2	55.0	55.8	56.6	57.4	58.2	59.0	59.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3469	3519	3569	3619	3669	3719	3769	3819	3869
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	60.6	61.4	62.2	63.0	63.8	64.6	65.4	66.2	67.0

### Dimensions (ETV-17)

- ETV-17-\*\*-W (Motor installation: Lower left installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	469	519	569	619	669	719	769	819	869	919	969	1019	1069	1119	1169	1219	1269	1319	1369	1419	1469	1519	1569	1619	1669	1719	1769	1819	1869	1919
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	12.0	13.8	14.6	15.4	16.1	16.9	17.7	18.5	19.2	20.0	20.8	21.6	22.3	23.1	23.9	24.7	25.4	26.2	27.0	27.8	28.6	29.4	30.2	31.0	31.8	32.6	33.4	34.2	35.0	35.8

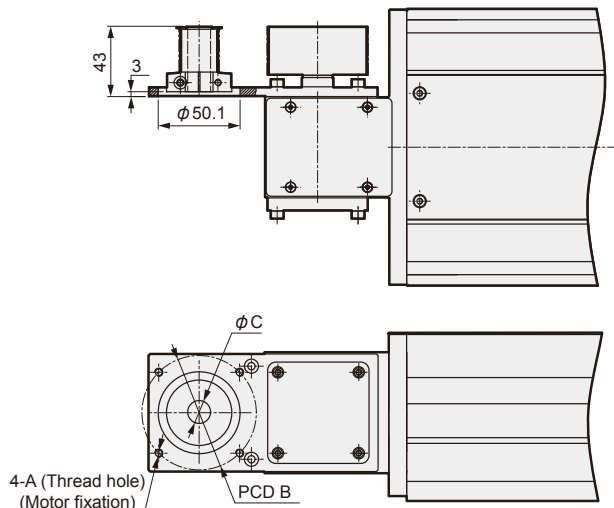
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	1969	2019	2069	2119	2169	2219	2269	2319	2369	2419	2469	2519	2569	2619	2669	2719	2769	2819	2869	2919	2969	3019	3069	3119	3169	3219	3269	3319	3369	3419
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	36.6	37.4	38.2	39.0	39.8	40.6	41.4	42.2	43.0	43.8	44.6	45.4	46.2	47.0	47.8	48.6	49.4	50.2	51.0	51.8	52.6	53.4	54.2	55.0	55.8	56.6	57.4	58.2	59.0	59.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3469	3519	3569	3619	3669	3719	3769	3819	3869
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	60.6	61.4	62.2	63.0	63.8	64.6	65.4	66.2	67.0

### Motor installation Dimensions (ETV-17)

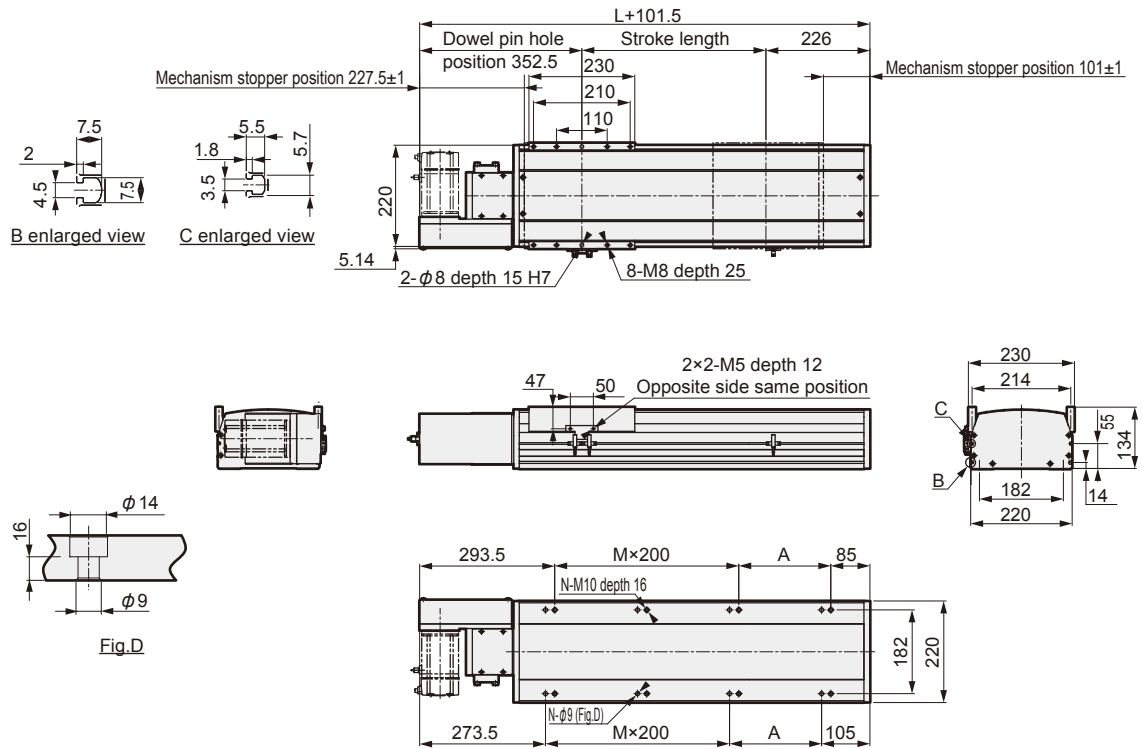
- ETV-17-R/S/T/L/V/W



ETV-10-R/S/T/L/V/W				
Installation motor specifications	A	B	C	Motor screw
M 400W	M5	φ70	φ14	4-M5×L12
Y 400W	M5	φ70	φ14	4-M5×L12
P 400W	M4	φ70	φ14	4-M4×L12

## Dimensions (ETV-22)

- ETV-22-\*\*-R (Motor installation: Right installation)



Note: Refer to page 32 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	577	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877	1927	1977	2027
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	30.0	31.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8

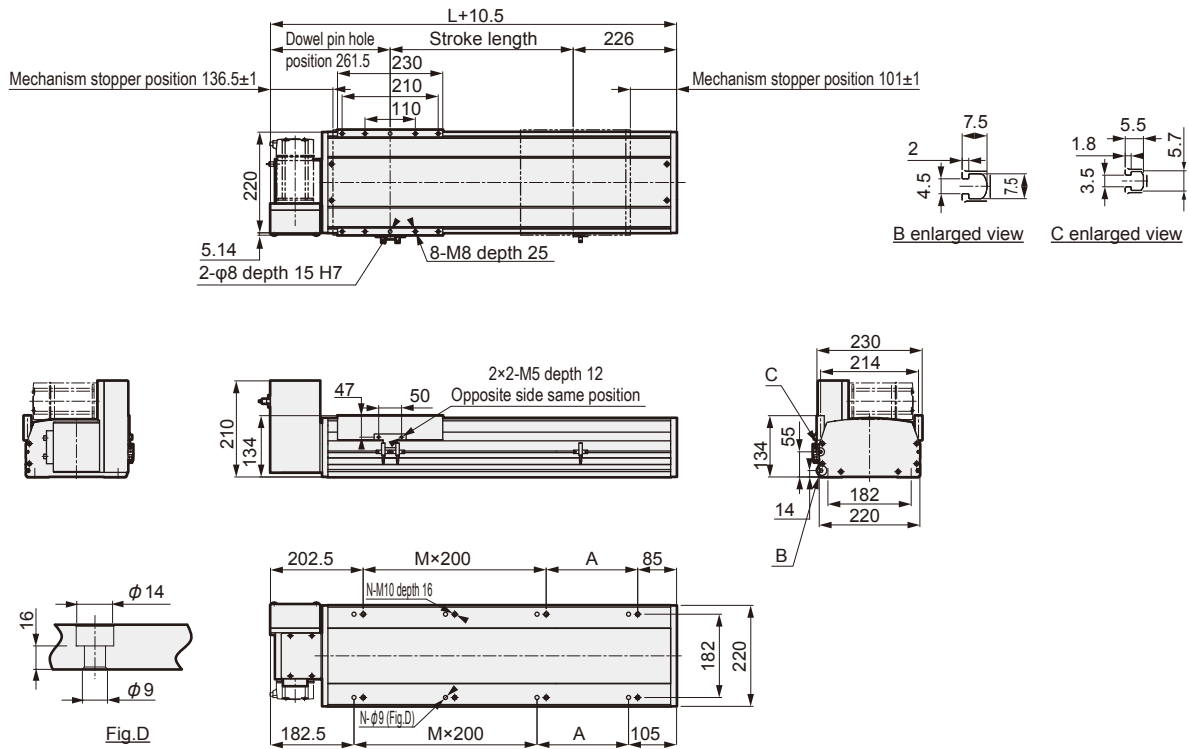
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2077	2127	2177	2227	2277	2327	2377	2427	2477	2527	2577	2627	2677	2727	2777	2827	2877	2927	2977	3027	3077	3127	3177	3227	3277	3327	3377	3427	3477	3527
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3577	3627	3677	3727	3777	3827	3877	3927	3977
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6

### Dimensions (ETV-22)

• ETV-22-\*\*-S (Motor installation: Upper right installation)



Note: Refer to page 32 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	577	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877	1927	1977	2027
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	30.0	31.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8

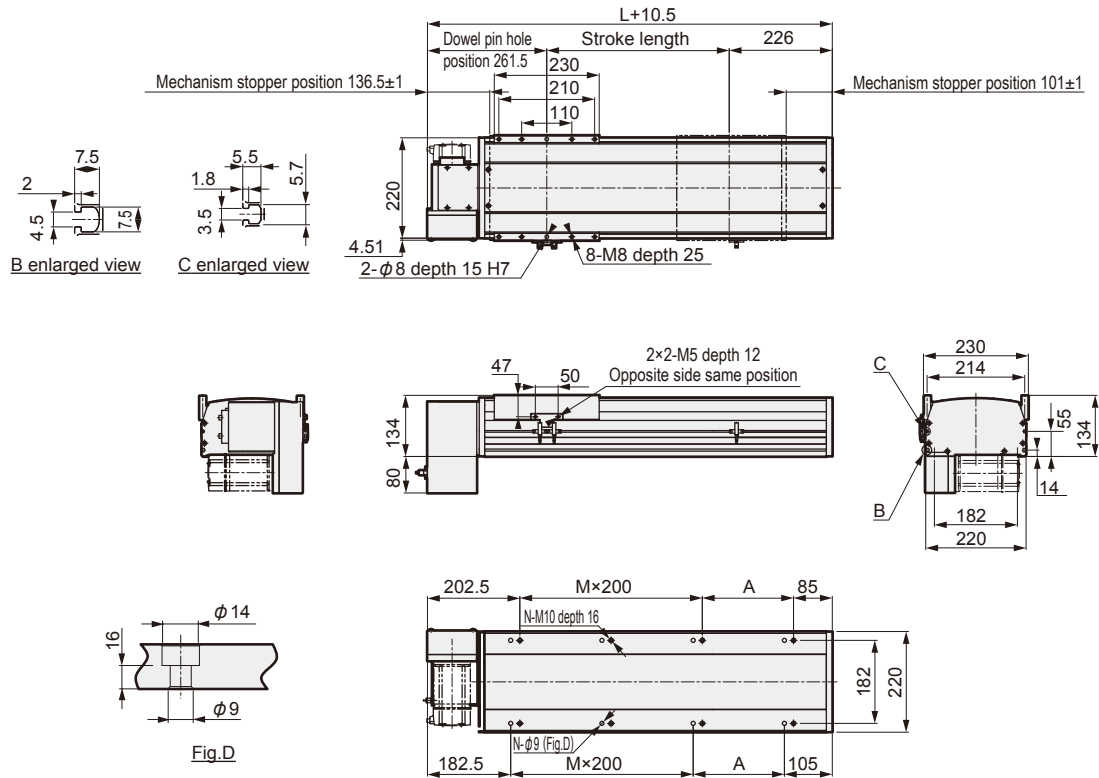
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2077	2127	2177	2227	2277	2327	2377	2427	2477	2527	2577	2627	2677	2727	2777	2827	2877	2927	2977	3027	3077	3127	3177	3227	3277	3327	3377	3427	3477	3527
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3577	3627	3677	3727	3777	3827	3877	3927	3977
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6

## Dimensions (ETV-22)

- ETV-22-\*\*-T (Motor installation: Lower right installation)



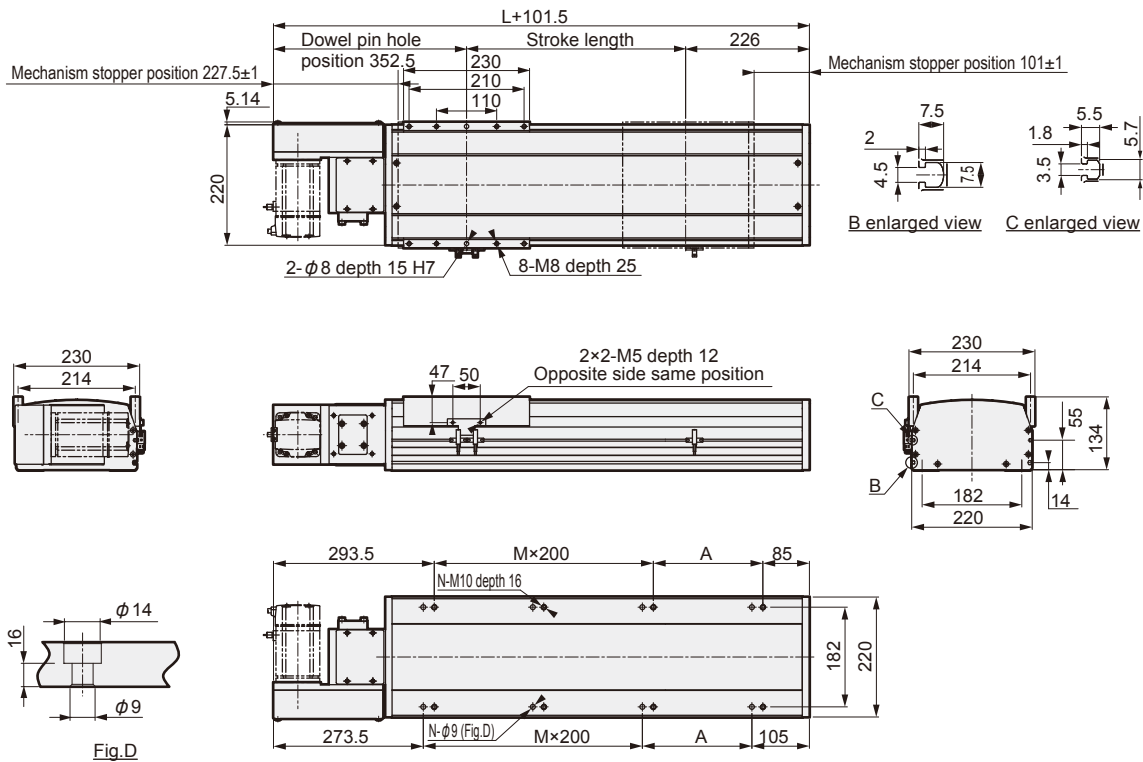
Note: Refer to page 32 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	577	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877	1927	1977	2027
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	30.0	31.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2077	2127	2177	2227	2277	2327	2377	2427	2477	2527	2577	2627	2677	2727	2777	2827	2877	2927	2977	3027	3077	3127	3177	3227	3277	3327	3377	3427	3477	3527
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8
Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500																					
L	3577	3627	3677	3727	3777	3827	3877	3927	3977																					
A	100	150	200	50	100	150	200	50	100																					
M	16	16	16	17	17	17	17	18	18																					
N	36	36	36	38	38	38	38	40	40																					
Weight (kg)	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6																					



### Dimensions (ETV-22)

- ETV-22-\*\*-L (Motor installation: Left installation)



Note: Refer to page 32 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	577	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877	1927	1977	2027
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	30.0	31.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8

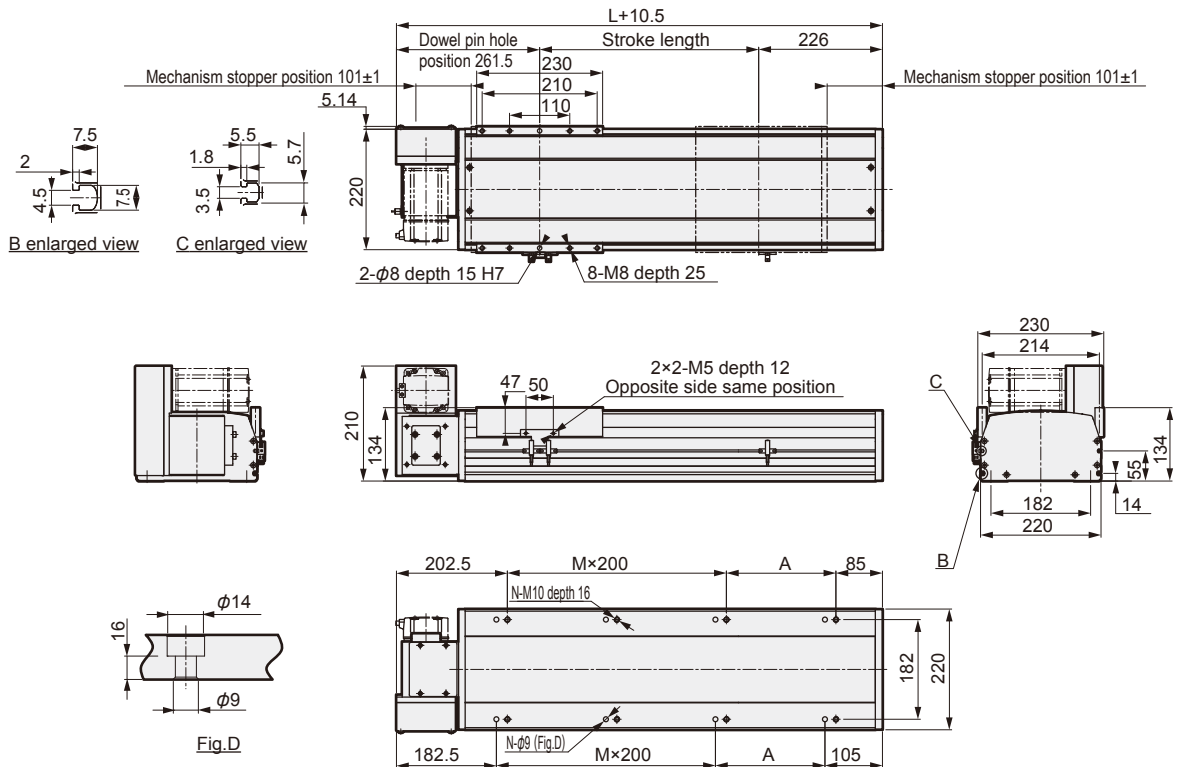
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2077	2127	2177	2227	2277	2327	2377	2427	2477	2527	2577	2627	2677	2727	2777	2827	2877	2927	2977	3027	3077	3127	3177	3227	3277	3327	3377	3427	3477	3527
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3577	3627	3677	3727	3777	3827	3877	3927	3977
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6

## Dimensions (ETV-22)

- ETV-22-\*\*-V (Motor installation: Upper left installation)

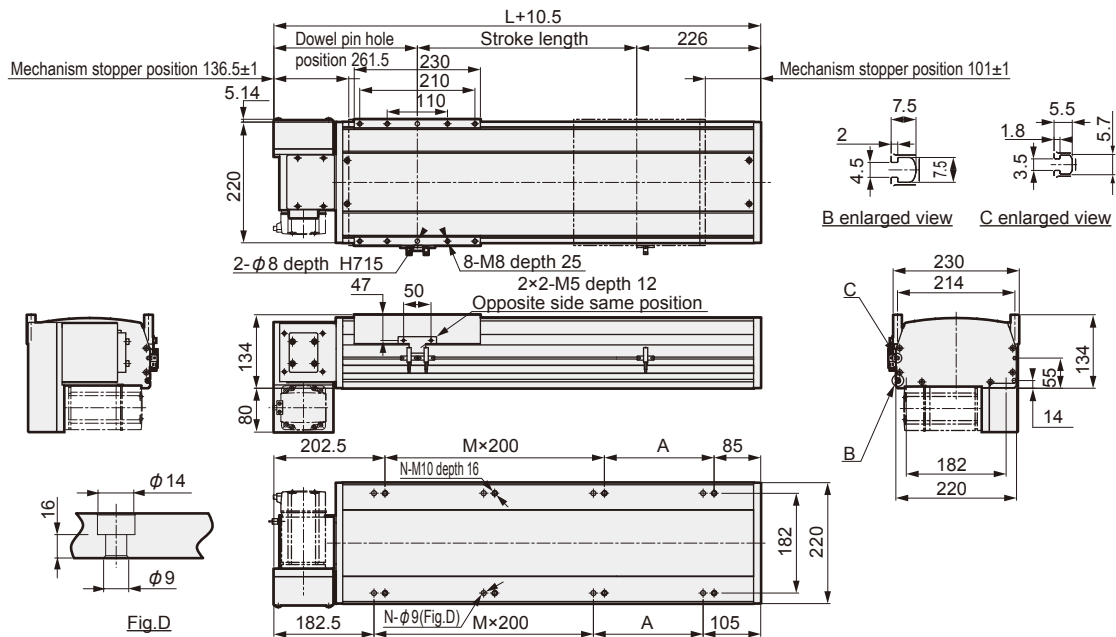


Note: Refer to page 32 for motor installation dimensions.

Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	577	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877	1927	1977	2027
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	10	10	10	10	12	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	30.0	31.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2077	2127	2177	2227	2277	2327	2377	2427	2477	2527	2577	2627	2677	2727	2777	2827	2877	2927	2977	3027	3077	3127	3177	3227	3277	3327	3377	3427	3477	3527
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8
Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500																					
L	3577	3627	3677	3727	3777	3827	3877	3927	3977																					
A	100	150	200	50	100	150	200	50	100																					
M	16	16	16	17	17	17	17	18	18																					
N	36	36	36	38	38	38	38	40	40																					
Weight (kg)	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6																					

### Dimensions (ETV-22)

- ETV-22-\*\*-W (Motor installation: Lower left installation)



Stroke length (mm)	100	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550
L	577	627	677	727	777	827	877	927	977	1027	1077	1127	1177	1227	1277	1327	1377	1427	1477	1527	1577	1627	1677	1727	1777	1827	1877	1927	1977	2027
A	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150
M	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6	6	6	7	7	7	7	8	8	8
N	6	6	6	8	8	8	8	8	10	10	10	10	12	12	12	14	14	14	14	16	16	16	16	18	18	18	18	20	20	20
Weight (kg)	30.0	31.2	32.4	33.6	34.8	36.0	37.2	38.4	39.6	40.8	42.0	43.2	44.4	45.6	46.8	48.0	49.2	50.4	51.6	52.8	54.0	55.2	56.4	57.6	58.8	60.0	61.2	62.4	63.6	64.8

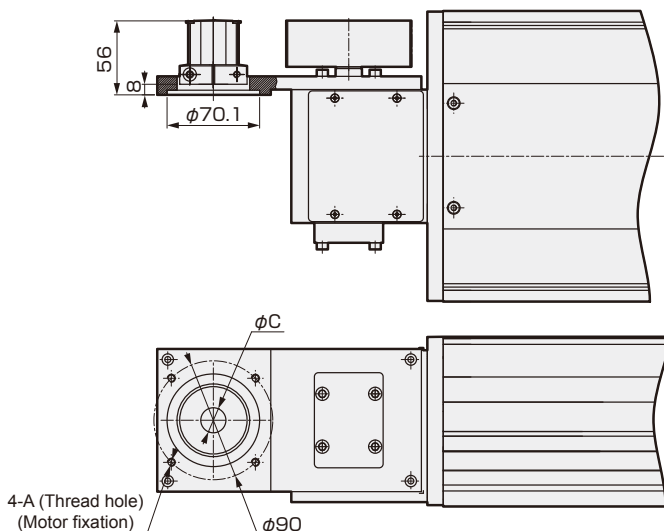
Stroke length (mm)	1600	1650	1700	1750	1800	1850	1900	1950	2000	2050	2100	2150	2200	2250	2300	2350	2400	2450	2500	2550	2600	2650	2700	2750	2800	2850	2900	2950	3000	3050
L	2077	2127	2177	2227	2277	2327	2377	2427	2477	2527	2577	2627	2677	2727	2777	2827	2877	2927	2977	3027	3077	3127	3177	3227	3277	3327	3377	3427	3477	3527
A	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50	100	150	200	50
M	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16
N	20	22	22	22	22	24	24	24	24	26	26	26	26	28	28	28	28	30	30	30	30	32	32	32	32	34	34	34	34	36
Weight (kg)	66.0	67.2	68.4	69.6	70.8	72.0	73.2	74.4	75.6	76.8	78.0	79.2	80.4	81.6	82.8	84.0	85.2	86.4	87.6	88.8	90.0	91.2	92.4	93.6	94.8	96.0	97.2	98.4	99.6	100.8

Stroke length (mm)	3100	3150	3200	3250	3300	3350	3400	3450	3500
L	3577	3627	3677	3727	3777	3827	3877	3927	3977
A	100	150	200	50	100	150	200	50	100
M	16	16	16	17	17	17	17	18	18
N	36	36	36	38	38	38	38	40	40
Weight (kg)	102.0	103.2	104.4	105.6	106.8	108.0	109.2	110.4	111.6

### Motor installation Dimensions (ETV-22)

- ETV-22-R/S/T/L/V/W



ETV-10-R/S/T/L/V/W				
Installation motor specifications	A	B	C	Motor screw
M 750W	M6	φ90	φ19	4-M6×L20
Y 750W	M6	φ90	φ19	4-M6×L20
P 750W	M5	φ90	φ19	4-M5×L20

## Selection guide

### STEP-1 Load capacity confirmation

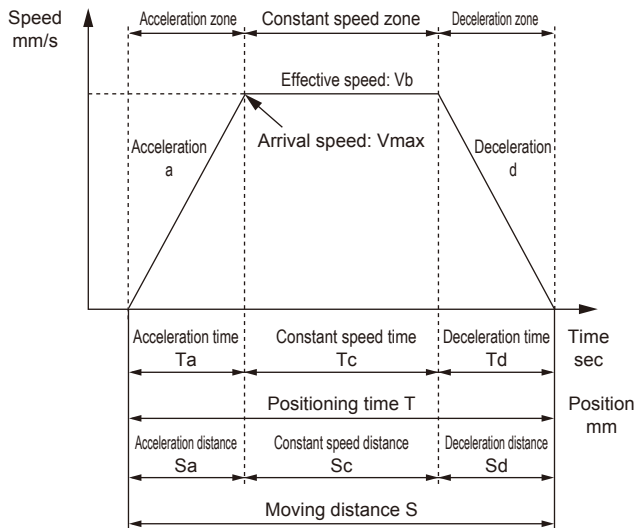
Load capacity changes according to mounting orientation and transferring speed.

Select size and lead referring selection table (Intro 1 and 2) and specification table (page 1 and 2) of each model.

### STEP-2 Cycle time confirmation

Confirm that cycle time matches to required one by calculating the cycle time according to the following example.

Select rotation speed and rotation acceleration and deceleration speed by specification tables of each model (page 1 and 2).



	Descriptions	Symbol	Unit	Remarks
Set value	Set speed	V	mm/s	
	Set acceleration	a	mm/s <sup>2</sup>	
	Set deceleration degree	d	mm/s <sup>2</sup>	
	Moving distance	S	mm	
Calculated value	Arrival speed	Vmax	mm/s	$= (2 \times a \times d \times S / (a + d))^{1/2}$
	Effective speed	Vb	mm/s	V and Vmax smaller one
	Acceleration time	Ta	s	$= Vb/a < 0.4 \text{ sec or more} >$
	Deceleration time	Td	s	$= Vb/d < 0.4 \text{ sec or more} >$
	Constant speed time	Tc	s	$= Sc/Vb$
	Acceleration distance	Sa	mm	$= (a \times Ta^2)/2$
	Deceleration distance	Sd	mm	$= (d \times Td^2)/2$
	Constant speed distance	Sc	mm	$= S - (Sa + Sd)$
Positioning time	T	s	$= Ta + Tc + Td$	

- Do not exceed speed in the specifications.
- Setting of acceleration and deceleration by acceleration time and deceleration time changes depending on the set speed and the stroke length.
- The velocity curve may not be available (unreachable to set speed) depending on acceleration speed and the stroke length. Compare Vmax with set speed.
- Acceleration and deceleration time should be over 0.4 sec.

### STEP-3 Allowable moment confirmation

Confirm that actual moment is less than allowable moment and overhang amount.

#### Allowable moment confirmation when operating

Confirm that actual moment is less than allowable moment. (satisfying the following formula)

$$M_T = \frac{W}{W_{max}} + \frac{MR_1 + MR_2}{MR_{max}} + \frac{MP_1 + MP_2 + MP_3}{MP_{max}} + \frac{MY_1 + MY_2 + MY_3}{MY_{max}} < 1$$

$M_T$ : composition of moment (must be less than 1)

W: vertical load

MR: rolling moment

MP: pitching moment

MY: yawing moment

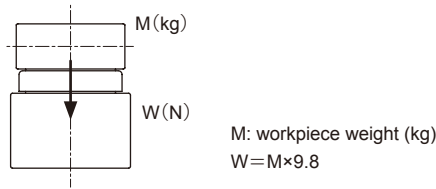
\*Take all the moments into consideration depending on the operating moment load.

$W_{max}$ : allowable load

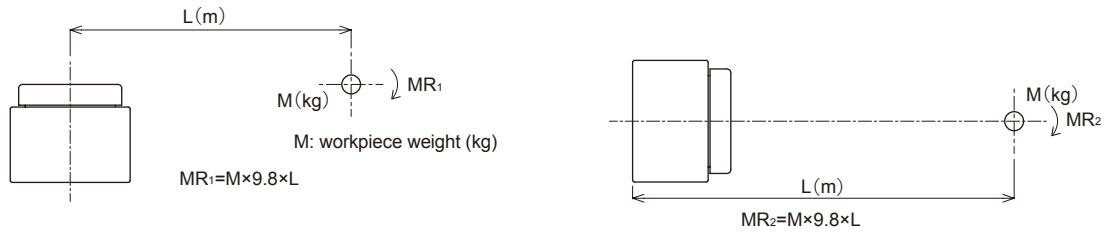
MR (max), MP (max), MY (max): Refer to page 35 to 38 for dynamic allowable moment.

Please set the "L" on page 34 below the allowable overhang amount on page 35 to 38.

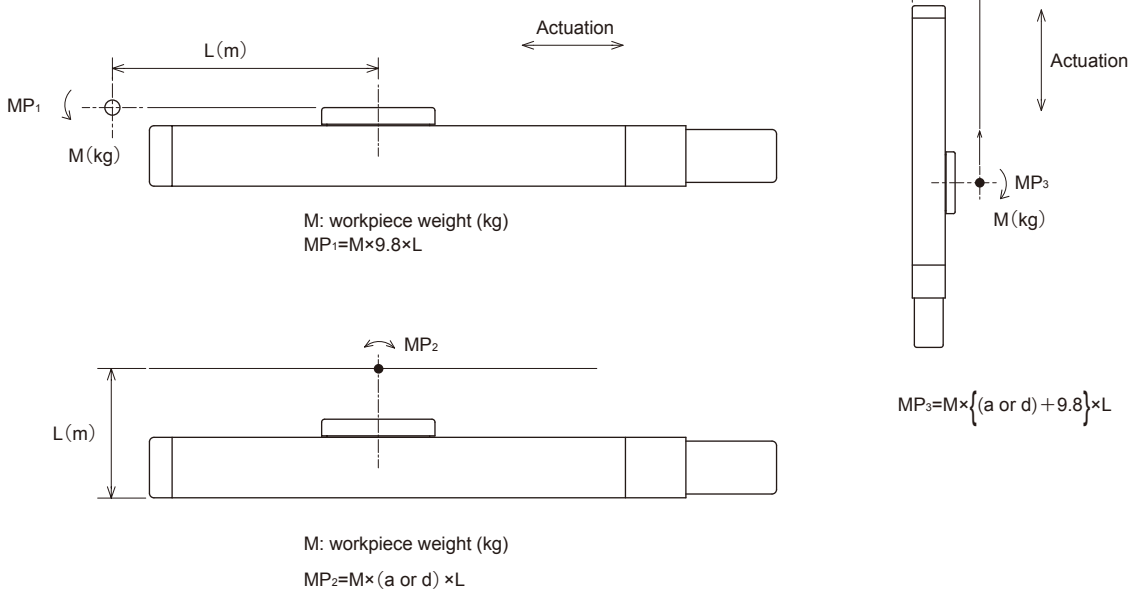
• Vertical load W (N)



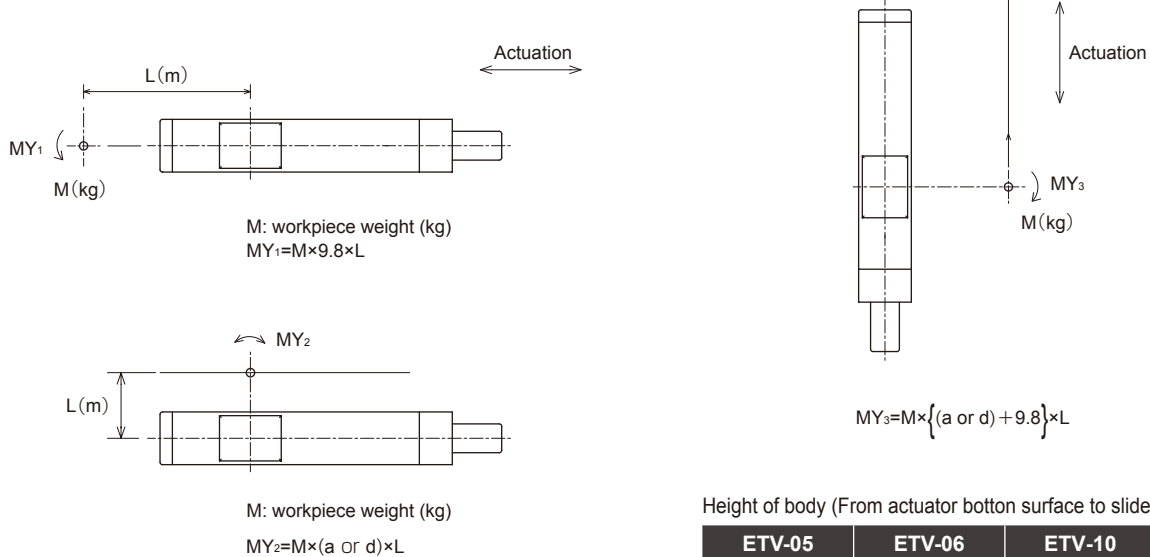
• Rolling moment MR (N·m)



• Pitching moment MP (N·m)



• Yawing moment MY (N·m)



Height of body (From actuator bottom surface to slider top surface)

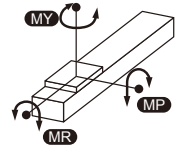
ETV-05	ETV-06	ETV-10	ETV-14
54	56	66	93
ETV-17	ETV-22		
108	134		

※Select the larger value of a or b.

[Dynamic allowable moment and overhang amount] Applicable motor size: 100W

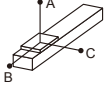
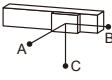
[Dynamic allowable load/Dynamic allowable moment]

	Allowable load		Allowable moment	
	W (max)	MR (max)	MP (max)	MY (max)
	(N)	(N·m)	(N·m)	(N·m)
ETV-05	551.1	6.8	2.8	2.8
ETV-06	1209.1	24.8	8.9	8.9
ETV-10	2651.4	24.8	24.1	24.1

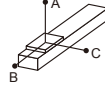
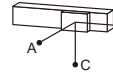


[Overhang amount]

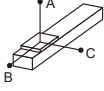
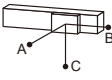
ETV-05

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	40	3	55	20	30
Side surface 	40	3	29	21	57

ETV-06

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	40	3	210	60	110
Side surface 	40	3	120	80	220

ETV-10

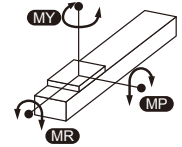
Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	32	5	550	160	140
		8	330	100	85
		10	260	80	65
Side surface 	32	5	140	160	520
		8	85	100	320
		10	65	75	250

Note: When using with roof suspension, please select 1/3 for allowable weight, dynamic allowable moment, and an overhang amount.  
For overhang amount to the load center of gravity, please use the overhang amount within each A, B, C orientation.

[Dynamic allowable moment and overhang amount] Applicable motor size: 200W

[Dynamic allowable load/Dynamic allowable moment]

	Allowable load	Allowable moment		
	W (max)	MR (max)	MP (max)	MY (max)
	(N)	(N·m)	(N·m)	(N·m)
ETV-14	6566.9	261.0	262.7	262.7



[Overhang amount]

ETV-14

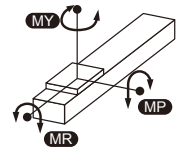
Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	40	10	1800	700	550
		20	880	330	260
		25	700	260	200
Side surface 	40	10	540	690	1800
		20	260	330	860
		25	200	255	680

Note: When using with roof suspension, please select 1/3 for allowable weight, dynamic allowable moment, and an overhang amount.  
For overhang amount to the load center of gravity, please use the overhang amount within each A, B, C orientation.

[Dynamic allowable moment and overhang amount] Applicable motor size: 400W

[Dynamic allowable load/Dynamic allowable moment]

	Allowable load	Allowable moment			
	W (max)	MR (max)	MP (max)	MY (max)	
	(N)	(N·m)	(N·m)	(N·m)	
ETV-17	10102.1	520.3	424.3	424.3	



[Overhang amount]

ETV-17

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	40	10	3000	1250	1150
		20	1600	600	550
		30	1050	400	360
		45	650	250	230
Side surface 	40	10	1150	1250	2700
		20	550	600	1550
		30	350	390	1000
		45	220	230	630

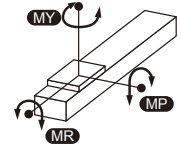
Note: When using with roof suspension, please select 1/3 for allowable weight, dynamic allowable moment, and an overhang amount.  
 For overhang amount to the load center of gravity, please use the overhang amount within each A, B, C orientation.



[Dynamic allowable moment and overhang amount] Applicable motor size: 750W

[Dynamic allowable load/Dynamic allowable moment]

	Allowable load	Allowable moment		
	W (max)	MR (max)	MP (max)	MY (max)
	(N)	(N·m)	(N·m)	(N·m)
ETV-22	14174.2	999.3	1098.5	1098.5



[Overhang amount]

ETV-22

Mounting orientation	Lead	Load kg	Overhang mm		
			A	B	C
Horizontal 	40	45	1700	650	470
		65	1150	420	310
		85	850	310	225
Side surface 	40	45	480	650	1700
		65	320	430	1150
		85	230	320	850

Note: When using with roof suspension, please select 1/3 for allowable weight, dynamic allowable moment, and an overhang amount.  
For overhang amount to the load center of gravity, please use the overhang amount within each A, B, C orientation.

## Summary of attachments

### Basic type

Motor mounting screw (Common motor installation direction)

Model no.	Installation motor	Motor size	Thread size	Qty. of attachment
ETV-05 ETV-06 ETV-10	M	100W	M4	2
	Y		M4	2
	P		M3	4
ETV-14	M	200W	M5	4
	Y		M5	4
	P		M4	4
ETV-17	M	400W	M5	4
	Y		M5	4
	P		M4	4
ETV-22	M	750W	M6	4
	Y		M6	4
	P		M5	4

### Motor installation direction discrepancy

Name of attachment	Qty. of attachment
Pulley	1
Belt	1

### When origin / limit sensor selected

Sensor installation direction	Shipping format	Quantity
Outside sensor	Attached shipping*1	3 *2

\*1 When "Nil" is selected for one of the home position sensor or the limit sensor, the other will also be "Nil". If "Nil" is selected, the center dog will also be "Nil".

\*2 Sensor installation thread included.

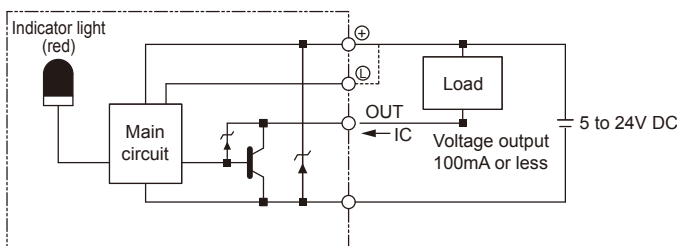
**Origin sensor, limit sensor**

	Manufacturer	Type
Outside installation sensor	OMRON	EE-SX672
Inside installation sensor	OMRON	EE-SX674

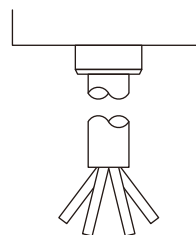
**Performance**

Descriptions	Specifications
Hysteresis	0.025mm or less
Light source (peak emission wavelength)	GaAs infrared LED (940nm)
Indicator light	Lighting when light on (red)
Power voltage	5 to 24V DC±10% Ripple (p-p) 10% or less
Current consumption	35mA or less (NPN type)
Control output	NPN type: NPN open collector Output 5 to 24V DC less than 100mA Current less than 0.5mA when off Residual voltage less than 0.8V (When load current 100mA) Residual voltage less than 0.4V (When load current 40mA)
Ambient luminance	Acceptance surface luminance fluorescent: less than 1,000lx
Ambient temperature	Operation: -25 to + 55°C Storage: -30 to + 80°C (No freezing)
Ambient humidity	Operation: 5 to 85%RH Storage: 5 to 95%RH (No freezing)
Degree of protection	IP50 IEC60529 standards
Code length	1m (connector with code (EE-1010 1M) )

**Output circuit**



**Wiring diagram**



**Terminal arrangement**

Brown	5 to 24V DC
Pink	L
Blue	0V
Black	OUTPUT



# Safety precautions

Be sure to read the instructions before use

When designing and manufacturing devices using electric actuator, the manufacturer has an obligation to manufacture a safe device, and to check that the safety of the device's mechanical mechanism and the system operated by the electrical control that controls the device is secured.

Product selection, its usage and handling, as well as adequate maintenance management are important in order to safely use CKD products.

Observe warnings and precautions to ensure device safety.

In addition, use without shock applying to the moving part. Check that device safety is ensured, and manufacture a safe device.

## WARNING

---

- 1** This product is designed and manufactured as a general industrial machine part. It must be handled by an operator having sufficient knowledge and experience in handling.
- 2** Use within the product's specification range.

This product must be used within its stated specifications. Do not attempt to modify or additionally machine the product.

This product is intended for use as a general-purpose industrial device or part. It is not intended for use outdoors or for use under the following conditions or environment.  
(If you consult CKD upon adoption and consent to CKD product specification, it will be applicable; however, safeguards should be adopted that will circumvent dangers in the event of failure.)

  - 1** Use for special applications including nuclear energy, railway, aircraft, marine vessel, vehicle, medical equipment, equipment or applications coming into contact with beverage or food, amusement equipment, emergency shutoff circuits, press machine, brake circuits or for safeguard.
  - 2** Use for applications where life or assets could be adversely affected, and special safety measures are required.
- 3** Observe corporate standards and regulations, etc., related to the safety of device design.
- 4** Do not remove devices until safety is confirmed.
  - 1** Inspect and service the machine and devices after securing the safety of all the systems related to this product.
  - 2** Exercise caution as high temperature and charged parts can be present even when operation is stopped.
  - 3** Before starting device inspection or maintenance, turn off the device power and other powers to related devices and check leakage current.
- 5** Observe warnings and cautions in the instruction manual of each product.
  - 1** Unexpected movement may occur during robot teaching or test operation, so keep hands, etc., away from the actuator. When conducting operation with the shaft not visible, be sure before starting operation that safety is ensured even if the actuator moves.
- 6** To prevent electric shock, observe warnings and cautions.
  - 1** Do not touch the heat sink, cement resistor and motor installed in the controller.

Failure to do so may cause burn because these parts are hot.  
Take sufficient time before conducting inspection and other operations.  
Even immediately after the power is turned off, a high voltage is applied until the electric charge accumulated in the internal capacitor is discharged. Wait three minutes or so after turning the power off before touching these parts.
  - 2** Turn off the controller power source before conducting maintenance or inspection.

Electric shocks from high voltage may occur.
  - 3** Do not connect or disconnect connectors while power is on. Misoperation, faults, or electrical shock may occur.
- 7** Set up the overcurrent protection device.

In carrying out wiring to the controller, install over-current protective devices (such as wiring breaker and circuit protector) to the primary power supply for power (terminal block number L1, L2 and L3) and control (connector number CN3-24VDC) in accordance with "JIS B 9960-1:2008 Safety of machinery - Electrical equipment of machines - Part 1: General requirements".


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(Excerpt from JIS B9960-1 7.2.1 General Requirements)


Overcurrent protection shall be provided where the current in a machine circuit can exceed either the rating of any component or the allowable current capacity of the conductors, whichever is the lesser value. The ratings or settings to be selected are specified in 7.2.10.

**8** Unexpected accident may happen. Observe the following cautions to prevent accidents.

■ The safety cautions are ranked as "DANGER", "WARNING" and "CAUTION" in this section.

 **DANGER:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries, or when there is a high degree of emergency to a warning.

 **WARNING:** When a dangerous situation may occur if handling is mistaken leading to fatal or serious injuries.

 **CAUTION:** When a dangerous situation may occur if handling is mistaken leading to minor injuries or physical damage.

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Note that some items described as "CAUTION" may lead to serious results depending on the situation. In any case, important information that must be observed is explained.

## Disclaimer

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### **1** Warranty period

"Warranty Period" of this product is one (1) year from the first delivery to the place you specified.

### **2** Scope of warranty

In case of a fault which is proved to be the responsibility of the CKD during the above warranty period, we shall offer a replacement part or a spare part of this product free of charge or repair the part in our plant free of charge.

Note that the following faults are excluded from the warranty:

- ① Operation under the conditions or in the environment derailing from those specified in the product specifications.
- ② Failure caused by lack of attention or erroneous control.
- ③ Failure caused by other than the delivered product.
- ④ Failure caused by operation derailing from the purposes for which the product is designed.
- ⑤ Failure caused by modification in the structure, performance, specification or other features made by other than us after delivery, or failure caused by repairs done by other than our designated contractor.
- ⑥ Loss in our product assembled to your machine or equipment, which would be avoided if your machine or equipment were provided with general functions, structures or other features common in the industry.
- ⑦ Failure caused by reason that is unforeseeable with technology put into practical use at the time of delivery.
- ⑧ Failure caused by fire, earthquake, flood, lightning, or other acts of God, earth shock, pollution, salt hazard, gas intoxication, excessive voltage, or other external causes.

The warranty mentioned here covers the discrete delivered product. Only the scope of warranty shall not cover losses induced by the failure of the delivered product

### **3** Warranty for exported products

- (1) Products returned to the CKD factory or to a company or factory designated by CKD shall be repaired. Work and cost necessary for transportation shall not be compensated for.
- (2) The repaired product shall be returned to a designated place in Japan with domestic packaging specifications. This warranty specifies basic conditions. If warranty details in individual specification drawings or specifications differ from these warranty conditions, specification drawings or specifications shall take priority.

### **4** Compatibility confirmation

The suitability of our products with system, machines, equipment that you are going to use, please check with your own risk.

### **5** Scope of service

Technician dispatch service expense is not included in the price of delivered products. We shall receive the expense separately in the following cases:

- (1) Installation adjustment instruction and presence in test operation
- (2) Maintenance, adjustment and repair
- (3) Technical guidance and technical training (operation, program, wiring method, safety education, etc.)



# Safety precautions

Be sure to read the instructions before use.

Individual precautions: Electric actuator ETV Series

## Design & Selection

### Danger

- Do not operate the product in flammable or explosive atmospheres.  
Doing so may create the risk of ignition and explosion.
- Keep the actuator away from drop of water or oil.  
Failure to do so may result in a fire or faulty operation.
- Make sure to hold and lock (including work pieces) when installing the product.  
The operator could be injured due to falling or abnormal operation of the product.

### Warning

- Use the product within the product-specific specification scope.
- Install a protection cover in case of possible danger to the operator.
  - If the electric actuator's movable portions may pose danger to the operator, be sure that the actuator has a structure preventing the operator from entering its operation range or touching the movable portions directly.
- In case the safety device stops the machine due to emergency stop, power outage or other system errors, the electric actuator must be designed so that its movement causes no damage to the operator and equipment.
- Install the actuator inside and keep away from humid places.  
Electrical leakage or a fire may occur in places where rainwater drips or is humid (under the conditions its humidity is more than 85% and condensation occurs). Drop of oil and oil mist should also be prohibited.
  - Failure to do so may result in damage or faulty operation.
- Use and store the product under the right use/ storage temperature in atmospheres without condensation.  
(Storage temperature: -10°C to 50°C, Storage humidity: 35% to 80%, Working temperature: 0°C to 40°C, Working humidity: 35% to 80%)  
Failure to do so may result in shorter life or abnormal stop of the actuator. Please ventilate if the heat is muffled.
- To prevent failure, explosion, or ignition, install the product away from direct sun, dust, flammable items, corrosive gas, explosive gas, and flammable gas.  
The product is not considered for chemical resistance.  
Failure to do so may result in the cause of break, explosion or ignition.

- Do not use and store the actuator in the places with strong electromagnetic waves, ultraviolet rays and radiation.  
Doing so may cause malfunction or failure.
- Take possibility of power source failure into consideration.
  - In case of a failure in the power source, take countermeasures without causing trouble or damage to the operator or equipment.
- Consider the operation status if the machine is reactivated after emergency stop or abnormal stop.
  - The machine must be designed so that reactivation causes no damage to the operator or equipment.  
If the electric actuator must be reset to the start position, be sure to provide the machine with safe control device.  
Take possibility of motor failure into consideration.  
In case of a failure in the power source, take countermeasures without causing damage to the operator or equipment.
- Do not use the actuator under shock or vibration conditions.
- Do not apply load exceeding the allowance specified in the selection document to the actuator.

### Caution

- Do not hit the trolley table against the stroke end.
- Specify the maintenance conditions in the equipment instruction manual.
  - Product functions may be deteriorated significantly due to usage, service conditions or maintenance. Conducting maintenance with accuracy allows the product to fully exert its functions.
- Read through the instruction manual to perform installation, adjustment and maintenance properly.
- The product is manufactured in conformity with the related standards. Never attempt to modify the product.
- Please check the motor/control manual, and wire and design it carefully.
- The suitability of our products with system, machines, equipment that you are going to use, please check with your own risk.

**Installation & Adjustment**

**⚠ Danger**

- Do not enter the operating range of the actuator when the product is ready to operate. The product may move suddenly and injure.

**⚠ Warning**

- Overturn, vibration, and shock should be avoided during transportation due to the integrated precision components. Parts could damage.
- In case of locating temporarily, place the actuator in a horizontal position.
- Set ambient temperature -10° to 50° and ambient humidity 35 to 80% when transporting without condensation or freezing. If not, failure may occur.
- Attachment to incombustible items is necessary. Direct attachment to flammable items or near the items could cause a fire. There is a risk of burns.
- Do not climb on top of the product, use it as a footstool or, place any object. That could be the causes of accidents by falling, turnover of the product, injury from falling, damage to the product, or operation errors caused by the damage.
- Even if there is a power failure, take countermeasures so as to cause no damage to human body, or to machines. This may results in failure to ensure safety.
- If any abnormality is found, stop using immediately and contact our sales office nearest you.

**⚠ CAUTION**

- Installing the actuator in places under large vibration or impact conditions may lead to malfunction. Malfunction could occur.
- Do not operate the moving part of the product or decelerate rapidly by an external force. There is a possibility to damage or malfunction by the regenerative current.
- During home return, do not hit the mechanical stopper etc. other than the pressing action. Damaged feed screw may cause malfunction.
- Durability can be changed by transport load or environment. Sufficient setting for transport load etc. is required. Only the scope of warranty shall not cover losses induced by the failure of the delivered product.
- Do not apply an excessive moment on the slider. The product can be damaged or malfunction.
- Do not operate the slider part before installing the motor. The product's interior belt is bent, leading to quirks and scratches, which in turn could cause early-stage damage.
- Flatness of the mounting surface should be 0.05mm/200mm, and do not give twist or bending force to the actuator.
- Flatness of the side of a work piece attaching to the slider should be less than 0.02. Do not give twist or bending force to it. The product can be damaged or malfunction.
- Tighten the screws that attach the body, using the screws in the table below with proper torque.

Thread size	Tightening torque (N•m)
M3	0.7
M4	1.5
M5	3
M6	5.2
M8	12.5
M10	24.5

**During Use & Maintenance**

**⚠ Danger**

- Do not work with wet hands. This could lead to electric shock.
- In the event of belt abnormality such as wear and tear of the belt tooth surface or side, tooth portion tearing, cracks on the back of the belt and softening, or partial cutting of the belt, etc. , the machine should be stopped immediately. Use environment and/or conditions may be improper.

**⚠ CAUTION**

- Conduct a regular check 2 to 3 times in a year to make sure to work properly.

- Please ensure proper maintenance of belt tension. Particular attention should be given to the initial stage stress alleviation (relaxation). In addition, increased noise and vibration resulting from inordinate stress may decrease product life span and jumping of teeth can occur.
- Grease lubrication interval is usually 100km. However, it varies depending on the use conditions. It is recommended to determine the lubrication interval by the initial inspection.
- When performing maintenance, inspection, repair, stop the power supply to the product before. Call attention to the others around you not to turn the power on, or operate carelessly by a third party.
- In case of disposing the product, follow the law of waste disposal and public cleaning outsource to professional waste disposal service.





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## Related products

### Electric actuator ERL2/ESD2 Series

- **Positioning point number**  
The versatile "high position (63 point positioning) is added to the conventional" 7 point positioning
- **Easy setting Tool**  
Easy PC setting software (E-tools) is added to teaching pendant (ETP2)
- **Fully compatible**  
"Full Compatibility" that features free combination of actuator and controller

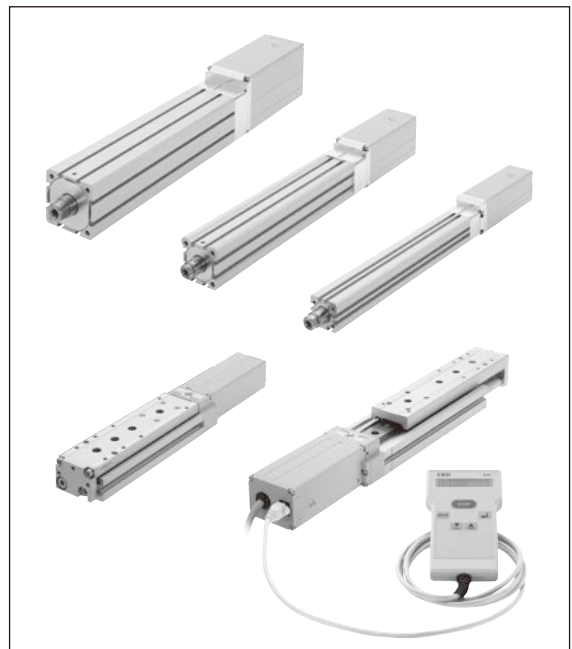
Catalog No.CC-1219A



### Electric actuator ESSD/ELCR Series

- **Space saving**  
Wiring and installation space for the controller are no longer required.
- **Design pneumatically**  
Shaped, used, operated like pneumatic cylinder.
- **Flexible motion control**  
3 control modes, speed & acceleration control and positioning completion width (imposition) can be set.
- **Easy teaching**  
Easy setting with 5 buttons. Direct configuration is available.

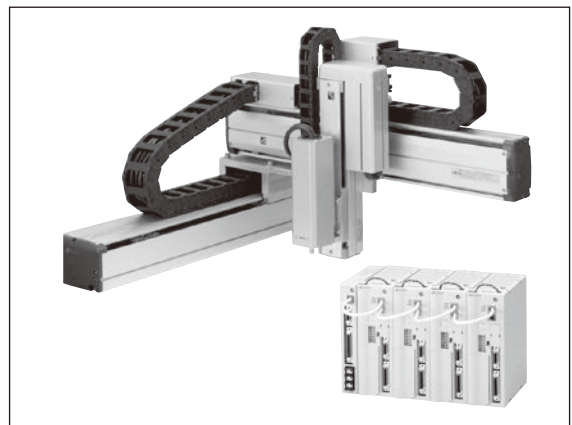
Catalog No.CC-1002A



### Electric actuator KBB Series

- **High cycle time**  
Max. 2000mm/s (timing belt drive)
- **High precision**  
Repeatability:  $\pm 0.01$ mm (ballscrew driver)
- **Absolute specifications for all models**  
All models are unified to no home position return required specifications by using long service life lithium batteries (service life: 50,000 hours)
- **High level process by high-speed CPU**  
Delivered high level process performance by adopting high speed CPU
- **Plenty variation**  
7 types of ball screws, 6 timing belts  
4 directions of installing position of motor are selectable for each axis

Catalog No.CC-783A



## Electric actuator KBZ Series

- **High cycle time**  
Max. operation speed of 800mm/s
- **Servo motor**  
Servo motor for a compact axis enables to high speed operation, quick acceleration and deceleration, and high load capacity.
- **Absolute specifications**  
No need for home position return routine
- **Compact controller**  
Drastic downsizing

Catalog No.CC-1102A



## Direct drive actuator ABSODEX compact type AX6000M Series

- **Space saving**  
In addition to industry's minimum dimensions, the concentric shape (the fixed axis and the rotation axis are the same) enables compact machine design that saves space.
- **Flexible**  
Operation can be realized as imagined because it has abundant program creation functions.  
Furthermore, it corresponds to simple operation setting such as automatic creation of point specified program.
- **High reliable and maintenance free**  
Because of the direct drive system (gearless), there is no need to worry about gear damage or accuracy changes through wear of the gear unit.

Catalog No.CC-1148A

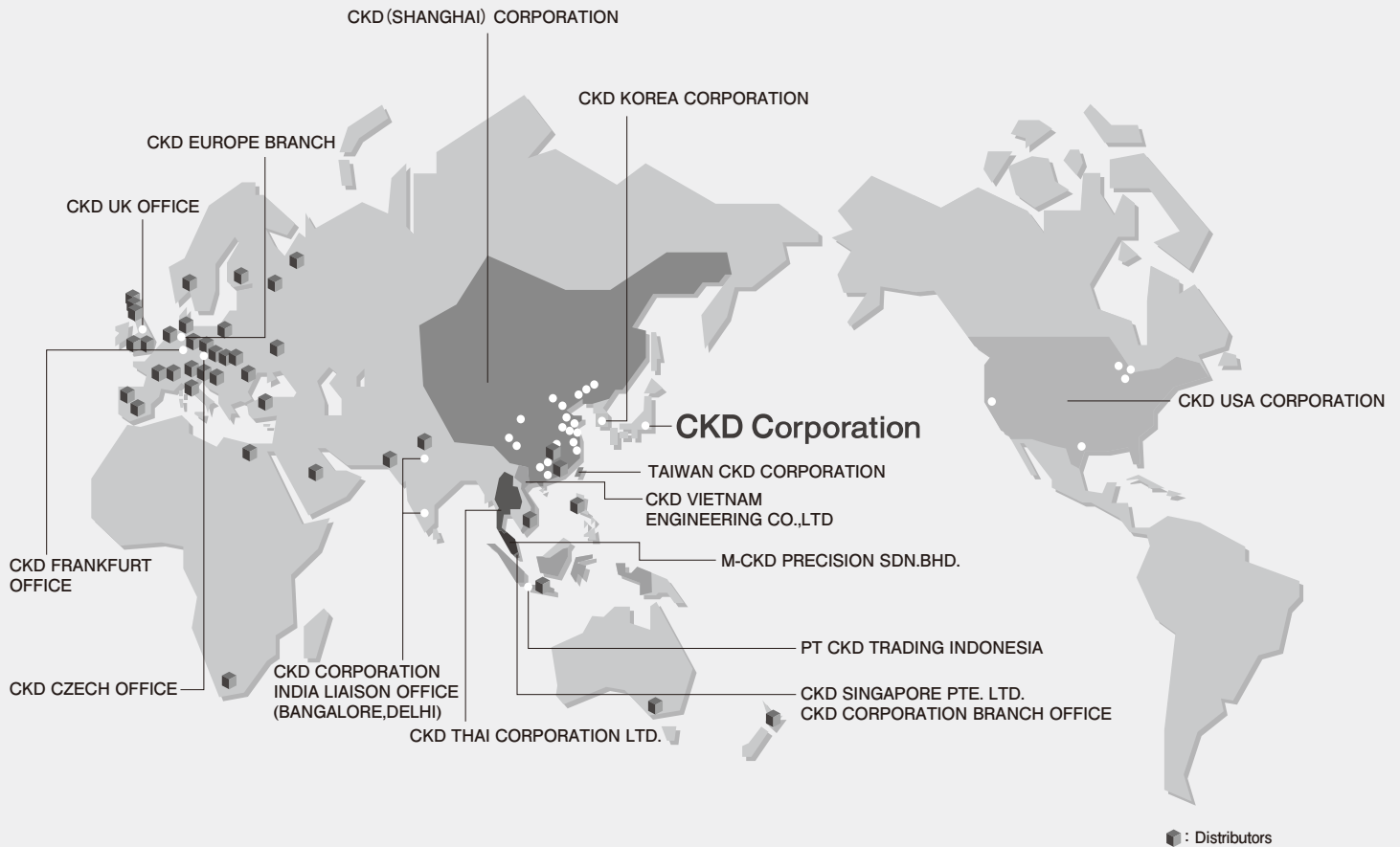


## Direct drive actuator ABSODEX quick response type AX1000T, AX2000T, AX4000T Series

- **Plenty actuator**  
12 types of actuators are available from 6 to 1000N•m
- **5 options for interface**  
5 types(Parallel I/O, (NPN,PNP), CC-Link, DeviceNet, PROFIBUS-DP) are available for driver interface

Catalog No.CC-995A





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